J-15

Division of Birds

The Wilson Bulletin

Official Organ of the Wilson Ornithological Club

An Illustrated Quarterly Magazine
Devoted to the Study
of Birds

Edited by Lynds Jones

Old Series, Volume XXVII New Series, Volume XXII

Smithsonian Institution
APR 25 1918
235336

Published by the Club at Chicago, Ill.
Nineteen Hundred and Fifteen

INDEX VOL. XXVII, 1915

Acanthis linaria linaria, 331.
Accipiter cooperi, 283, 311, 328, 439.
nisus, 380.
velox, 283, 328.
Acridotheres ginginianus, 253.
tristis, 252.
Actitis macularia, 238, 282, 327.
Actodromas minutilla, 311.
Ægialitis meloda, 327.
semipalmata, 327.
Agelaius phœniceus, 240, 272.
phœniceus, 285, 293-302 inclusive, 444.
fortis, 330.
Aix sponsa, 325, 412.
Alca torda, 347.
Aluco pratincola, 283, 328.
Ammodramus savannarum australis, 313.
bimaculatus, 331.
Ammomanes lusitana, 383.
Ampelis cedrorum, 241.
Amphispiza nevadensis nevadensis, 241.
Anas fulvigula, 412.
obscura rubripes, 310.
platyrhynchos, 237, 282, 412, 437.
rubripes, 282, 324.
tristis, 313.
Anser albifrons gambeli, 326.
Anthus pratensis, 277.
rubescens, 313, 334.
spraguei, 334.
Anous stolidus, 277, 281.
Antrostomus vociferus, 284.
vociferus, 329.
Aphelocoma californica californica, 284.
siberi arizonæ, 284.
woodhousei, 284.
Aquila chrysaëtos, 238, 277, 283, 288, 328.
Arachnechthra asiatica, 256.
Archibuteo ferrugineus, 242, 283, 328.
lagopus sancti-johannis, 283, 328.
Archilochus alexandri, 284.
colubris, 284, 329, 362, 443.
Ardea cinerea, 373, 377.
herodias, 237, 310.
herodias, 282, 325.
Ardeola grayi, 245.
russata, 369.
Arenaria interpres morinella, 327.
Argya caudata, 257.
Asio flammeus, 283, 329.
wilsonianus, 283, 329.
Astragalinus tristis pallidus, 240.
tristis, 278, 285, 331, 444.
Astur atricapillus artricapillus, 328.
Asyndesmus lewisi, 284.
Athene glaux, 380.
meridionalis, 380.
noctua, 380.
Auk, Razor-billed, 347.
Avocet, 232, 234, 235, 237, 238, 326.
Aythya americana, 310.
Babblers, 256.
Jungle, 257.
Striated, 257.
Bæolophus bicolor, 313.
Baldpate, 324, 412.
Barbet, Crimson-breasted, 249, 271.
Bartramia longicauda, 278, 282, 327.
Bee-eater, Common Indian, 249, 271.
Little Green, 373, 383.
Bittern, 237, 282, 310, 324, 325, 435, 437, 442, 461.
Least, 324, 325, 437, 461, 462.
Blackbird, Brewer's, 222, 225, 233, 234, 240, 285, 330.
Red-winged, 228, 231, 240, 278, 285, 293-302 inclusive, 337, 351, 352, 366, 405, 431, 435, 444, 461, 462.
Rusty, 285, 330, 337.

Thick-billed Red-wing, 324.
Yellow-headed, 229, 231, 232, 240, 277, 285, 324, 330, 437, 460, 462.
Bluebird, 224, 256, 286, 313, 320, 335, 337, 352, 355, 375, 407, 417, 437, 448, 459.
Mountain, 242.
Bob-white, 274, 276, 280, 282, 327, 337, 419.
Bobolink, 240, 278, 279, 285, 323, 330, 351, 405, 418, 437, 438, 443, 459.
Bombycilla cedrorum, 277, 286, 333, 446.
Bonasa umbellus togata, 282.
umbellus, 282.
Botaurus lentiginosus, 237, 282, 310, 325, 437.
Brachypternus aurantius, 256.
Brant, 325.
Branta bernicla glaucogastra, 325.
canadensis canadensis, 282, 326.
hutchinsi, 325.
Bubo ascalaphus, 374.
virginianus, 375.
pacificus, 283.
pallescens, 238, 283, 329.
subarcticus, 329.
virginianus, 283, 329.
Budytes flava, 384.
Bufflehead, 326.
Bulbuls, 256, 257.
Red-whiskered, 256.
Bunting, Indigo, 278, 285, 309, 310, 323, 406, 445, 459.
Lark, 223, 241, 332.
Lazuli, 285, 332.
Painted, 278.
Snow, 278, 285, 331.
Buteo borealis borealis, 283.
calurus, 238, 283, 328.
kreideri, 328.
lineatus, 311.
lineatus, 283, 328, 441.
platypterus, 283, 311, 328.
swainsoni, 238, 283, 328.
Butorides virescens virescens, 282, 325, 437.
Calcarius lapponicus lapponicus, 331.
ornatus, 331.
Calamospiza melanocorys, 241, 332.
Calypte anna, 284.
costæ, 284.
Canvas-back, 325, 337.
Cardinal, 272, 273, 285, 313, 323, 332, 337, 342, 414, 445, 462, 463, 466.
Kentucky, 466.
Cardinalis cardinalis cardinalis, 285, 332, 445.
Carpodacus mexicanus frontalis, 240, 285.
purpureus, 278, 331.
Catbird, 226, 278, 286, 289, 323, 334, 340, 351, 352, 406, 431, 437, 447, 457.
Cathartes aura septentrionalis, 238, 283, 328.
urubu, 283.
Catoptrophorus semipalmatus inornatus, 327.
Centrocercus urophasianus, 282.
Centurus aurifrons, 284.
carolinus, 284.
uropygialis, 284.
Cepphus grylle, 281.
Certhis familiaris americana, 278, 334.
Ceryle alcyon, 238, 283, 329, 441.
guttata, 267.
rudis, 267, 377.
Chætura pelagica, 284, 329, 443.
Chaffinch, European, 222.
Charadrius dominicus dominicus, 327.
Charitonetta albeola, 326.
Chamæpelia passerina terrestris, 283.
Chaulelasmus streperus, 324, 412.
Chat, Black-eared, 385.
Desert, 385.
Long-tailed, 242.
White-rumped, 385.
Yellow-breasted, 286, 334, 406.
Chebec, 405.
Chen cærulescens, 326.
hyperboreus hyperboreus, 326.
Chenalopex ægypticus, 387.
Chewink, 414.
Chickadee, 272, 273, 278, 286, 313, 316, 323, 337, 353, 407, 432, 447.
Long-tailed, 334.
Mountain, 227, 242.
Chicken, Prairie, 282, 327, 418, 437, 439.
Chondestes grammacus grammacus, 331.
strigatus, 240, 285.

Chordeiles virginianus, 284.
howelli, 239.
sennetti, 329.
Ciconia alba, 377.
Circus hudsonius, 238, 283, 328, 439.
pallidus, 379.
Cistothorus stellaris, 312, 354.
Clangula clangula americana, 326.
Coccyzus americanus, 279.
americanus, 283, 329, 441.
erythrophthalmus, 279, 283, 329, 441.
Colaptes auratus luteus, 239, 278, 284, 329, 441.
cafer collaris, 239, 329.
Colinus virginianus, 282.
virginianus, 327.
Columba fasciata fasciata, 282.
intermedia, 268.
livia, 283.
Colymbus auritus, 310, 324.
nigricollis californicus, 237, 324.
Coot, 237, 264, 265, 280, 282, 324, 325, 337, 389, 418, 437, 439, 461.
Copysychus saularis, 258.
Coracias garrula, 284.
indica, 247.
Corby, Indian, 252.
Cormorant, Double-crested, 324.
Red-faced, 282.
Corvus brachyrhynchos, 240, 285.
brachyrhynchos, 330, 443.
corax principalis, 279, 284, 330.
cornix, 375.
cryptoleucus, 285.
macrorhynchus, 252.
ossifragus, 285, 312.
splendens, 251, 375.
umbrinus, 376.
Cotyle obsoleta, 384.
Cowbird, 232, 240, 279, 285, 289, 323, 330, 352, 405, 417, 418, 434, 444, 446, 448, 459.
Crane, Sandhill, 325.
Whooping, 325.
Crateropus canorus, 257.
Crow, 228, 240, 247, 252, 264, 285, 289, 290, 323, 330, 337, 352, 405, 435, 443, 454, 459.
Fish, 285, 312.
Hooded, 371, 375, 376.
Indian House, 251, 252, 375.
Jungle, 252.
Crossbill, 331.
White-winged, 331.
Cryptoglaux acadica acadica, 283, 398.
Curlew, Long-billed, 234, 238, 327, 413.
Cuckoos, 437, 459.
Black-billed, 279, 283, 323, 329, 404, 405, 441.
European, 279.
Yellow-billed, 279, 283, 323, 329, 352, 405, 441.
Cyanecula suecica, 382.
Cyanocephalus cyanocephalus, 285.
Cyanocitta cristata cristata, 284, 330, 443.
frontalis, 284.
stellata annectens, 239.
Cyanospiza cyanea, 310.
Cypselus affinis, 251.
Dafila acuta, 237, 325.
Dendragapus obscurus fuliginosus, 282.
obscurus, 282.
Dendrocitta rufa, 257.
Dendroica æstiva, 241.
æstiva, 277, 286, 333, 446.
auduboni, 242.
cærulescens cærulescens, 333.
castanea, 333.
coronata, 286, 333.
discolor, 286.
fusca, 307, 312, 333.
magnolia, 286, 333.
palmarum hypochrysea, 286.
pennsylvanica, 277, 286, 288, 333.
striata, 333.
virens, 286, 334.
Dickcissel, 323, 332, 353, 418.
Dicrurus ater, 247.
cœrulescens, 247.
Dolichonyx oryzivorus, 240, 278, 285, 330, 443.
Dove, Domestic, 283.
Egyptian Turtle, 386.
Ground, 283.
Little Brown, 268.
Mourning, 225, 227, 283, 351, 405, 439, 459.
Spotted, 268.
Turtle, 376, 386.
Western Mourning, 238, 323, 327.
White-winged, 283.
Dowitcher, Long-billed, 326.
Drongo, Black, 247.
White-bellied, 247.

Dryobates pubescens homorus, 239.
medianus, 283, 329, 441.
scalaris bairdi, 283.
villosus hyloscopus, 283.
monticola, 239.
villosus, 283, 329.
Duck, Black, 282, 313, 324, 337.
Florida, 412.
Lesser Scaup, 326, 337, 412.
Red-legged Black, 310.
Ring-necked, 326, 337.
Ruddy, 326, 352.
Scaup, 326, 337.
Wood, 325, 412.
Dumetella carolinensis, 278, 286, 334, 447.
Ectopistes migratorius, 283, 327.
Eagle, Bald, 283, 328.
Golden, 238, 277, 283, 288, 328.
Gray Sea, 283.
Eider, Northern, 282.
Elanoides forficatus, 328.
Empidonax difficilis difficilis, 284.
flaviventris, 303.
hammondi, 239.
minimus, 239, 284, 330.
traillii, 239.
alnorum, 284.
traillii, 284.
wrightii, 239.
Ereunetes pusillus, 326.
Eudynamis honorata, 251.
Euphagus carolinus, 285, 330.
cyanocephalus, 240, 285, 330.
Eurynorhynchus pygmæus, 278.
Falco columbarius, 311.
columbarius, 283, 328.
richardsoni, 328.
babalonicus, 374.
lanarius, 374.
mexicanus, 238, 328.
peregrinus anatum, 283, 311, 328.
rusticolus rusticolus, 328.
sparverius sparverius, 238, 283, 328, 441.
tinnunculus, 380.
Falcon, Lanner, 374.
Prairie, 230, 237, 238, 328.
Red-naped, 374.
Fantail, 385.
Finch, House, 222, 223, 240, 285.
Purple, 278, 285, 331, 337.
Flamingo, 282, 372.
Flicker, 284, 313, 323, 351, 352, 418, 433, 459.
Northern, 239, 271, 278, 329, 337, 405, 441.
Red-shafted, 227, 239, 329.
Flycatcher, Acadian, 352.
Alder, 225, 284, 303, 304, 305, 330.
Arkansas, 235.
Crested, 284, 305, 352, 368, 405, 421-434 inclusive, 443.
Hammond's, 225, 239.
Least, 239, 284, 303, 305, 323, 330, 352, 405.
Olive-sided, 284, 303, 305, 330, 459.
Scissor-tailed, 284.
Vermillion, 284.
Western, 284.
White-spotted Fantail, 264.
Wright's, 235, 239, 284.
Yellow-bellied, 302, 303, 305, 405.
Fregata aquila, 413.
Fringilla carduelis, 312.
Fulica americana, 237, 282, 325, 439.
Gadwall, 324, 353, 412.
Galerita cristata, 383.
Gallinago delicata, 277, 326.
Gallinule, Florida, 311, 325, 437, 439, 461, 462.
Gallinula galeata, 311, 325, 439.
Gannet, 282, 411.
Gavia immer, 281, 324.
Geococcyx californicus, 283.
Geothlypis trichas occidentalis, 242, 334.
trichas, 281, 286, 447.
Godwit, Hudsonian, 327.
Marbled, 327.
Golden-eye, 326, 337.
Goldfinch, 278, 285, 288, 323, 331, 337, 342, 406, 418, 435, 437, 444, 459.
Arkansas, 342.
European, 312.
Western, 225.
Willow, 278.
Goose, Blue, 326.
Canada, 282, 326.
Egyptian, 387.
Hutchins, 325.
Red-breasted, 388.
Snow, 326.
White-fronted, 326, 388.
Goshawk, 328.
Mexican, 283.
Grackle, Boat-tailed, 285.
Bronzed, 221, 240, 257, 285, 302, 323, 331, 337, 351,

352, 368, 434, 444.
Great-tailed, 285.
Purple, 285, 406.
Grebe, Eared, 234, 237, 324.
Horned, 310, 324.
Pied-billed, 281, 323, 324, 337, 355, 437, 461.
Grosbeak, 272, 294, 335.
Black-headed, 332, 342, 359.
Evening, 278, 285, 331, 355.
Rose-breasted, 277, 285, 296, 302, 309, 320, 323, 332, 357-368 inclusive, 406, 445.
Grouse, Canada Ruffed, 282.
Dusky, 282.
Columbian Sharp-tailed, 282.
Prairie Sharp-tailed, 282, 327.
Ruffed, 274, 282, 337, 419.
Sage, 227, 236, 282.
Sooty, 282.
Grus americana, 325.
mexicana, 325.
Guara alba, 282.
Guillemots, 347.
Black, 281.
Gull, Black-headed, 372.
Franklin's, 281, 323, 324.
Herring, 281, 324, 337.
Ring-billed, 228, 237, 324.
Gyps fulvus, 376.
tenuirostris, 269.
Haliæetus albicilla, 283.
leucocephalus, 283.
leucocephalus, 328.
Haliaster indus, 251.
Halcyon smyrnensis, 267.
Harrier, Pale-crested, 379.
Hawk, Broad-winged, 283, 311, 328, 405.
Cooper's, 238, 274, 283, 311, 328, 405, 439.
Duck, 283, 311, 328.
Ferruginous Rough-legged, 236, 283, 328.
Kreider's, 328.
Marsh, 238, 283, 320, 323, 328, 337, 405, 435, 439.
Red-shouldered, 283, 311, 328, 405, 441.
Red-tailed, 235, 253, 274, 283.
Richardson's Pigeon, 328.
Rough-legged, 283, 328, 337.
Sharp-shinned, 283, 328.
Sparrow, 225, 227, 238, 271, 283, 323, 328, 337, 351, 380, 405, 435, 441, 465.
Swainson's, 230, 234, 283, 328.
Western Red-tailed, 232, 283, 323.
Helmitheros vermivorus, 286.
Helodromas solitarius solitarius, 327.
Heron, Black-crowned Night, 282, 310, 325, 405, 439.
Buffed-backed, 369.
Common, 372, 373, 377.
Great Blue, 221, 237, 282, 310, 325, 405.
Green, 282, 324, 325, 405, 435, 437, 461.
Night, 377, 418.
Hesperiphona vespertina vespertina, 278, 285, 331.
Hirundo erythrogastra, 241, 286, 333, 446.
rustica, 267, 384.
savignii, 384.
Honeysucker, Purple, 256.
Hoopoe, 378, 383.
Indian, 255, 256, 260, 271.
Hoplopterus spinosus, 386.
Hummingbird, 276.
Anna's, 284.
Black-chinned, 284.
Broad-tailed, 225, 237.
Costa's, 284.
Ruby-throated, 284, 329, 352, 362, 405
Rufous, 284, 342.
Hydrochelidon nigra surinamensis, 237, 281, 324, 437.
Hylocichla aliciæ aliciæ, 335.
fuscescens salicicola, 335.
guttata palasii, 286, 335.
mustelina, 286, 335, 447.
ustulata swainsoni, 286, 335.
ustulata, 286.
Ibis, Glossy, 282.
White, 282.
Icteria virens longicauda, 242.
virens, 286, 334.
Icterus bullocki, 240, 285, 330.
cucullatus nelsoni, 285.
glabula, 285, 330, 444.
spurius, 285, 330.
Ictinia mississippiensis, 407, 408.
Iridoprocne bicolor, 241, 286, 333, 446.
Ixobrychus exilis, 325, 437.
Jay, Arizona, 284.
Birch, 248.
Black-headed, 235, 239.
Blue, 248, 272, 273, 284, 313,

323, 330, 337, 405, 437, 443, 459.
Blue-fronted, 284.
California, 284.
Canada, 284.
Indian Blue, 248.
Pinon, 285.
Rocky Mountain, 236, 239.
Steller's, 284.
Woodhouse's, 284.
Junco hyemalis, 285.
hyemalis, 332.
phœnotus caniceps, 241.
Junco, 337, 417.
Gray-headed, 235, 241.
Slate-colored, 285, 332, 337.
Kestrel, 380, 389.
Killdeer, 224, 232, 235, 238, 277, 324, 327, 337, 350, 352, 405, 437.
Kingfisher, 228, 271, 280, 324, 435.
Belted, 238, 283, 329, 352, 405, 441.
Black and White, 337.
Large-crested Black and White, 267.
Pied, 267, 377.
White-breasted, 267.
Kingbird, 239, 247, 284, 305, 323, 329, 405, 433, 443, 461.
Arkansas, 225, 239, 284, 329.
Cassin's, 284.
Kinglet, Golden-crowned, 302, 305, 306, 307, 334.
Ruby-crowned, 236, 242, 305, 307, 334.
Kite, 374.
Brahminy, 251.
Common Pariah, 251, 252, 253.
Mississippi, 407.
Parasitic, 371, 375, 376.
Swallow-tailed, 328.
Koel, Indian, 251.
Lanius, borealis, 333.
cristatus, 251.
lahtora, 264, 386.
ludovicianus excubibtorides, 333.
ludovicianus, 286.
migrans, 281, 286, 312.
nubicus, 386.
Lanivireo solitarius solitarius, 286, 333.
Lapwing, Red-wattled, 264.
Lark, Crested, 382, 383, 384.
Desert, 383.
Desert Horned, 223, 239, 330.
Horned, 234.
Prairie Horned, 330, 337, 383.
Lagopus lagopus lagopus, 282.
Larus argentatus, 281, 324, 347.
delawarensis, 237, 324.
franklini, 281, 324.
fuscus, 347.
ridibundus, 347, 372.
Limosa fedoa, 327.
hæmastica, 327.
Lobipes lobatus, 326, 465.
Longspur, Chestnut-collared, 331.
Lapland, 331, 418.
McCown's, 223, 234, 240.
Lophodytes cucullatus, 324.
Lophortyx californica californica, 282.
gambeli, 282.
vallicola, 282.
Loon, 281, 324.
Loxia leucoptera, 331.
Magpie, 231, 236, 239, 284.
Robin, 258, 271.
Machlolophus haplonotus, 264.
Macrorhamphus griseus scolopaceus, 326.
Mallard, 228, 237, 282, 324, 337, 412, 437, 461.
Man-o'-War-Bird, 413.
Mareca americana, 324, 412.
Marila affinis, 326, 412.
americana, 325.
collaris, 326.
marila, 326.
vallisneria, 325.
Martin, Purple, 241, 277, 285, 312, 323, 332, 406, 445.
Meadowlark, 223, 230, 277, 285, 337, 351, 352, 405, 417, 418, 437, 444, 459.
Western, 221, 223, 240, 285, 323, 330.
Megaquiscalus major macrourus, 285.
major, 285.
Melanerpes erythrocephalus, 239, 284, 329, 441.
Meleagris gallopavo silvestris, 282, 329.
Melitæa minuta, 236.
Melopelia asiatica, 283.
Melospiza georgiana, 285, 332, 445.
lincolni lincolni, 332.
melodia juddi, 332.
melodia, 285, 415, 445.
Merganser, 282, 324.
Hooded, 324, 337.
Red-breasted, 282, 324, 337.

Mergus americanus, 282, 324.
serrator, 282, 324.
Merops viridis, 249, 373.
Micropalama himantopus, 326.
Micropallas whitneyi, 283.
Milvulus ægyptus, 375.
govinda, 251. 375.
Mimus polyglottos, 278.
polyglottos, 286, 334.
Mniotilta varia, 333.
Mockingbird, 286, 334, 353.
Molothrus ater, 240.
ater, 285, 330, 444.
Motacilla alba, 258, 383.
maderaspatensis, 259.
Muscivora forficata, 284
Myadestes townsendii, 242, 335.
Myiarchus cinerascens cinerascens, 284.
crinitus, 284, 421-434 inclusive, 443.
Myiochanes richardsoni richardsoni, 239.
virens, 284, 330, 443.
Myna, Bank, 253, 271.
Black-headed, 253.
Brahminy, 253, 271.
Common, 251, 252, 253, 257, 271.
Grey-headed, 254.
Nighthawk, 284, 353, 459.
Sennet's, 323, 329.
Western, 235.
Neophron ginginianus, 268.
percnopterus, 375.
Nettion carolinensis, 237, 310, 325.
Noddy, 280, 281.
Nucifraga columbiana, 240, 285.
Numenius americanus, 327, 413.
longirostris, 238.
Nutcracker, Clark's, 236, 240, 285.
Nuthatch, 272, 274, 277.
Red-breasted, 227, 242, 274, 286, 312, 313-315 inclusive, 334, 337. 407.
White-breasted, 313, 323, 334, 337, 407.
Nuttalornis borealis, 284, 330.
Nyctea nyctea, 329.
Nycticorax griseus, 377.
nycticorax nævius, 282, 311, 325.
Oceanites oceanicus, 411.
Oidemia nigra, 347.
Olor columbianus, 325.
cignus, 282.
Oporornis formosus, 348.
philadelphia, 334.
tolmiei, 242.
Oreospiza chlorura, 241.
Oriole, Arizona Hooded, 285.
Baltimore, 285, 323, 330, 351, 368, 405, 444, 459.
Bullock's, 225, 240, 285, 330.
Orchard, 285, 323, 330, 352, 405.
Oroscoptes montanus, 242.
Orthotomus sutorius, 257.
Ortogyps calvus, 269.
Osprey, 283, 312, 328, 373.
Otocoris alpestris leucolæma, 239, 330.
Otus asio asio, 283, 329, 441.
maxwelliæ, 238.
Oven-bird, 286, 323, 334, 406, 447.
Owl, Acadian, 400.
Arctic Horned, 329.
Barn, 283, 328, 398, 416.
Barred, 329, 397, 398, 399, 401, 402, 405.
Burrowing, 222, 225, 238, 283, 329, 400.
Eagle, 374.
Egyptian Eagle, 374.
Elf, 283.
Great Horned, 227, 283, 329, 337, 396, 397, 403.
Little, 380.
Long-eared, 283, 329.
Pacific Horned, 283.
Rocky-Mountain Screech, 235, 238.
Saw-whet, 283, 395, 398.
Screech, 271, 274, 283, 323, 329, 337, 398, 402, 403, 404, 405, 441, 465.
Short-eared. 283, 329.
Snowy, 329, 400.
Southern Little, 380.
Western Horned, 238, 283, 329.
Oxyechus vociferus, 238, 277, 327.
Oystercatcher, 282.
Paddy-birds, 254.
Palæornis torquatus, 259.
Pandion haliaëtus, 373.
carolinensis, 283, 313, 328.
Parrakeet, Rose-rumped, 259.
Parus atriceps, 264.
gambeli, 242.
Passer domesticus, 249, 285, 287, 312, 318, 381, 390.
biblicus, 381.
chephreni, 381.

indicus, 381.
niloticus, 381.
hispaniolensis, 381.
Passerculus sandwichensis alaudinus, 240.
savanna, 285, 331.
Passerella iliaca iliaca, 332.
schistacea, 285.
Passerherbulus lecontei, 331.
nelsoni nelsoni, 331.
Passerina amœna, 285, 332.
ciris, 278.
cyanea, 278, 285, 332, 445.
Pediœcetes phasianellus campestris, 282, 327.
columbianus, 282.
Pelecanus erythrorhynchos, 282, 324.
occidentalis, 282.
Pelican, Brown, 282.
White, 282, 290, 291, 324, 372.
Pelidna alpina sakhalina, 277, 326.
Penthestes atricapillus atricapillus, 278, 286, 447.
septentrionalis, 334.
Perisoreus canadensis, 284.
capitalis, 239.
Petrochelidon lunifrons lunifrons, 241, 286, 333.
Petrel, Leach's, 281.
Wilson's, 411.
Peucæa æstivalis bachmani, 414.
Pewee, Western Wood, 239.
Wood, 284, 303, 304, 305, 323, 330, 352, 405, 435, 443, 459.
Phainopepla, 286.
Phainopepla nitens, 286.
Phalacrocorax auritus auritus, 324.
urile, 282.
Phalænoptilus nuttallii, 239.
Phalarope, Northern, 326, 465.
Wilson's, 228, 230, 231, 232, 237, 238, 326.
Phasianus colchicus, 282, 312.
Pheasant, English, 282.
Mongolian, 459.
Ring-necked, 312.
Philohela minor, 277, 282, 326, 437.
Phœnicopterus ruber, 282.
Phlœotomus pileatus pileatus, 284.
Phœbe, 249, 250, 278, 284, 305, 330, 337, 352, 405, 443.
Say's, 235, 239, 284, 330.
Phaëthon americanus, 282.
Pica pica hudsonia, 239, 284.
Picoides americana americana, 284.
Pigeon, Band-tailed, 282.
Blue Rock, 268.
Passenger, 283, 327.
Pintail, 232, 233, 237, 324, 325, 337, 388.
Pipilo erythrophthalmus erythrophthalmus, 285, 332, 445.
maculatus arcticus, 241, 332.
Pipit, 313, 334.
Sprague's, 334.
Piranga erythromelas, 278, 332, 445.
ludovicianus, 241.
Pisobia bairdii, 326.
fuscicollis, 326.
maculata, 326.
minutilla, 326.
Planesticus migratorius migratorius, 286, 335, 448.
propinquus, 242.
Plectrophenax nivalis nivalis, 278, 285, 331.
Plegadis autumnalis, 282.
Plover, Black-bellied, 327.
Black-headed, 386, 387.
Golden, 327, 353,
Mountain, 227, 238.
Piping, 327.
Ringed, 371, 386.
Semipalmated, 327.
Spur-winged, 386, 387.
Upland, 278, 327.
Pluvianus ægyptius, 386.
Podasocys montanus, 238.
Podilymbus podiceps, 281, 324, 437.
Poœcetes gramineus, 309.
confinis, 240, 331.
gramineus, 285, 444.
Poor-will, 235, 239.
Porzana carolina, 237, 282, 311, 325.
Progne subis, 241, 277, 312.
subis, 285, 332, 445.
Protonotaris citrea, 277, 286.
Pseudogyps bengalensis, 267.
Ptarmigan, White-tailed, 235.
Willow, 282.
Pyrocephalus rubinus mexicanus, 284.
Querquedula cyanoptera, 237, 325.
discors, 237, 310, 325, 412.

Quiscalus quiscalus æneus, 240, 285, 331, 444.
quiscula, 285.
Rail, 435.
King, 325, 439, 440, 461.
Virginia, 325, 335, 404, 405, 439.
Rallus elegans, 325, 439.
virginianus, 325, 439.
Raven, Brown-necked, 376.
Northern, 279, 284, 330.
White-necked, 284.
Recurvirostra americana, 238, 326.
Redhead, 310, 325, 337, 418.
Redpoll, 331.
Red-tail, Western, 238, 328.
Red-wing, 367, 417.
Thick-billed, 330.
Redstart, 286, 334, 406, 435, 446, 447.
Indian, 256, 258.
Rhipidura pectoralis, 264.
Regulus calendula, 242, 334.
satrapa satrapa, 305, 334.
Rhynchophanes macownii, 240.
Riparia riparia, 241, 333, 446.
Road-runner, 283.
Robin, 253, 286, 323, 335, 337, 351, 352, 355, 407, 417, 418, 437, 448, 455, 459.
Brown-backed Indian, 236, 258, 271.
Western, 227, 242.
Roller, European, 248, 271.
Indian, 247, 248.
Rough-leg, Ferruginous, 227, 242.
Ruticilla rufiventris, 258.
Salpinctes obsoletus obsoletus, 242.
Sandpiper, Baird's, 326.
Bartramian, 282.
Buff-breasted, 327.
Green, 371, 386.
Least, 311, 326, 405.
Pectoral, 326.
Red-backed, 277, 326.
Semipalmated, 326.
Spoon-billed, 278.
Solitary, 327, 405.
Spotted, 278, 280, 282, 327, 352, 405.
Stilt, 326.
White-rumped, 326.
Sapsucker, Red-breasted, 284.
Red-naped, 239, 284.
Yellow-bellied, 329.
Saxicola amphileuca, 385.
aurita, 385.
leucophygia, 385.
Sayornis phœbe, 278, 284, 330, 443.
sayus, 239, 284, 330.
Scarcogrammus indicus, 264.
Scoter, 347.
Seiurus aurocapillus, 286, 334, 447.
noveboracensis notabilis, 334.
Selasphorus platycercus, 239.
rufus, 284.
Setophaga ruticilla, 277, 286, 334, 447.
Shags, 264.
Shoveller, 232, 233, 237, 324, 325, 377.
Shrike, 248.
Indian Brown, 251.
Indian Grey, 264.
Loggerhead, 286.
Masked, 386.
Migrant, 286, 443.
Northern, 333.
Northern Loggerhead, 312.
Pallid, 386.
White-rumped, 323, 333.
Sialia corrucoides, 242.
sialis sialis, 286, 335, 448.
Siskin, Pine, 240, 288, 312, 331.
Sitta canadensis, 242, 277, 286, 312, 334.
carolinensis, carolinensis, 334.
Snipe, Wilson's, 277, 326.
Solitaire, Townsend's, 227, 242, 335.
Somateria mollissima borealis, 282.
Sora, 237, 282, 311, 324, 325, 461.
Sparrow, Bachman's, 414, 418, 460.
Brewer's, 226, 241.
Chipping, 278, 285, 305, 316, 323, 332, 351, 353, 406, 444.
Clay-colored, 224, 241, 332.
English, 222, 240, 248, 253, 272, 312, 342, 353, 418, 444, 446, 447, 463.
European House, 278, 285.
Field, 285, 337, 406, 414, 437, 445, 459.
Fox, 332, 352.
Grasshopper, 313, 406.
Harris', 331.
Henslow's, 203, 331, 352, 406.
House, 258, 267, 375, 382, 406.

Lark, 323, 331, 418.
Leconte's, 331.
Lincoln's, 332, 352, 406.
Mountain Song, 241.
Nelson's, 331.
Sabuta Song, 332.
Sage, 226, 235, 241.
Savanna, 285, 331.
Slate-colored Fox, 285.
Song, 272, 285, 332, 337, 352, 406, 414, 415, 417, 437, 445, 459.
Spanish, 381.
Swamp, 285, 305, 332, 352, 406, 435, 445.
Tree, 272, 337, 417.
Vesper, 285, 309, 337, 353, 406, 437, 444.
Western Chipping, 224, 241.
Western Field, 332.
Western Grasshopper, 323, 331.
Western Lark, 240, 285.
Western Savanna, 234, 240.
Western Vesper, 226, 240, 331.
White-crowned, 224, 240, 331, 406.
White-throated, 224, 241, 285, 305, 331, 404, 406.
Spatula clypeata, 237, 325.
Speotyto cunicularia hypogæa, 238, 283, 329.
Sphyrapicus ruber ruber, 284.
varius nuchalis, 239, 284, varius, 329.
Spinus pinus, 240, 288, 312, 331.
Spiza americana, 332.
Spizella breweri, 241.
pallida, 241, 332.
monticola ocracea, 331.
passerina passerina, 278, 285, 332, 444.
pusilla arenacea, 332.
pusilla, 285, 445.
Squatarola squatarola, 327.
Starling, 253, 285, 289, 290, 313, 405.
Common Indian, 256, 258, 271.
Steganopus tricolor, 238, 326.
Stelgidopteryx serripennis, 333.
Sterna antillarum, 324.
dougalli, 281.
forsteri, 324.
fuscata, 281.
hirundo, 281.
Stork, 254, 377.
White, 377.
Strix varia varia, 329, 398.
Sturnia malabarica, 254.
Sturnella magna, 277.
magna, 285, 418, 444.
neglecta, 240, 285, 330.
Sturnus menzbieri, 258.
vulgaris, 285, 289, 313.
Sula bassana, 282, 411.
Sun-bird, Purple, 256.
Swallow, Bank, 225, 241, 333, 435, 446.
Barn, 241, 285, 406, 446.
Cliff, 224, 235, 241, 285, 333, 406, 446.
European, 267, 384.
Northern Violet-Green, 241.
Pale Crag, 384.
Red-rumped, 267.
Rough-winged, 333, 352, 406.
Tree, 241, 285, 353, 406, 446.
Violet-Green, 224.
Wire-tailed, 267.
Swan, Whistling, 325.
Wooping, 282.
Swift, Chimney, 251, 281, 323, 329, 351, 405, 413, 418, 443, 459.
Common Indian, 251.
Tachycineta thalassina lepida, 241.
Tailor-bird, Indian, 256, 257.
Tanager, Scarlet, 278, 323, 332, 496, 445.
Western, 235, 241.
Teal, 229, 377.
Blue-winged, 232, 237, 310, 324, 325, 412.
Cinnamon, 233, 237, 325.
Green-winged, 237, 310, 325, 337.
Telmatodytes palustris iliacus, 334, 419.
palustris, 286, 447.
Temenuchus pagodarum, 253.
Tern, Black, 233, 237, 281, 323, 324, 437, 461, 462.
Common, 281.
Forster's, 324.
Least, 324.
Roseate, 281.
Sooty, 281.
Thamnobia campaiensis, 258.
Thrasher, Brown, 286, 298, 302, 323, 334, 351, 353, 406, 437, 447, 459.
Curve-billed, 286.
Sage, 226, 235, 237, 242.
Thrush, European, 416.
Gray-cheeked, 335, 407.

Hermit, 286, 335, 353, 455.
Olive-backed, 286, 305, 335, 407, 448-455 inclusive.
Russet-backed, 286.
Willow, 335, 459.
Wood, 286, 323, 335, 407, 416, 447, 448.
Tit, Grey, 271.
Southern Yellow, 264, 271.
Tufted, 407.
Titmice, 272.
Titmouse, Indian Grey, 264.
Tufted, 272, 273, 337.
Totanus flavipes, 238, 327.
melanoleucus, 238.
ocropus, 386.
Tohee, 285, 323, 332, 352, 406, 435, 444, 445.
Arctic, 235, 332.
California, 342.
Green-tailed, 227, 241.
Toxostoma curvirostra curvirostra, 286.
rufum, 286, 334, 447.
Tree-pie, 256.
Indian, 257.
Troglodytes aëdon aëdon, 286, 447.
parkmani, 334.
Tropic-bird, Yellow-billed, 282.
Thryomanes bewicki, 286.
Thryothorus ludovicianus ludovicianus, 286.
miamensis, 278, 286.
Tryngites subruficollis, 327.
Turdus musicus, 416.
Turkey, Wild, 282, 327.
Turnstone, Ruddy, 327.
Turtur cambayensis, 268.
senegalensis, 386.
suratensis, 268.
Tympanuchus americanus americanus, 282, 327, 439.
Tyrannus tyrannus, 239, 284, 329, 443.
verticalis, 239, 284, 329.
vociferus, 284.
Urubitinga anthracina, 283.
Uria troile, 347.
indica, 255.
Upupa epopa, 378.
Veery, 407.
Vermivora celata celata, 333.
chrysoptera, 286.
peregrina, 333.
pinus, 286.
rubricapilla rubricapilla, 286.
Vireo belli belli, 333.
gilvus, 241.
griseus griseus, 316.
Vireo, Bell's, 333.
Blue-headed, 286, 333, 406.
Philadelphia, 333, 352.
Red-eyed, 286, 333, 342, 406, 435, 446, 459.
Warbling, 227, 241, 323, 333, 351, 406, 418, 446.
White-eyed, 316-321 inclusive, 406.
Yellow-throated, 406.
Vireosylva gilva gilva, 333, 446.
olivacea, 286, 333, 446.
philadelphia, 277, 333.
Vulture, Black, 269, 283, 376.
Egyptian, 375, 376.
Griffon, 376.
Long-billed, 269, 270.
Turkey, 227, 238, 283, 328.
White-backed, 269, 270.
White Scavenger, 268, 270.
Vultus monarchus, 376.
Wagtail, Grey, 258.
Grey-headed Yellow, 383, 384.
White, 258, 374, 376, 382, 383.
Warbler, Audubon's, 227, 235, 236, 242.
Bay-breasted, 333, 353, 406.
Black and White, 333, 406.
Blackburnian, 302, 305, 307, 308, 312, 333, 352, 406.
Black-headed, 385.
Black-poll, 333, 406.
Black-throated Blue, 333, 406.
Black-throated Green, 286, 334, 406.
Blue-throated, 382, 385, 389.
Blue-winged, 286, 406.
Canada, 353, 406.
Cape May, 352, 406.
Chestnut-sided, 277, 286, 288, 333, 353, 406.
Chiff-chaff, 385.
Fantail, 385.
Golden-winged, 286.
Kentucky, 348.
Macgillivray's, 242.
Magnolia, 286, 304, 308, 333, 406.
Mourning, 334, 353.
Myrtle, 286, 304, 308, 333, 404, 406.
Nashville, 286, 304, 352, 406.
Northern Parula, 352, 406.
Orange-crowned, 333, 352.
Palm, 334.

Prairie, 286, 353.
Prothonotary, 277, 286, 349.
Tennessee, 333, 406.
Wilson's, 309, 310, 334, 406.
Worm-eating, 286, 406.
Yellow, 241, 277, 286, 309, 323, 333, 406, 435, 446.
Yellow Palm, 286.
Yellow-throated, 304.
Water-Thrush, 306, 352.
Grinnell's, 334.
Louisiana, 406.
Northern, 406.
Waxwing, Bohemian, 333.
Cedar, 241, 277, 285, 333, 406, 436, 437, 446, 459.
Whippoorwill, 284, 329, 404, 405.
Willet, Western, 327.
Wilsonia pusilla pusilla, 310, 334.
Woodcock, 229, 277, 282, 326, 353, 404, 405, 439, 459.
Woodpecker, 272, 437.
Bachelder's, 225, 239.
Cabanis', 283.
Downy, 272, 273, 283, 313, 323, 329, 337, 405, 432, 433, 441.
Gila, 284.
Golden-backed, 256.
Golden-fronted, 284.
Hairy, 273, 283, 313, 323, 329, 337, 405.
Lewis', 284.
Pileated, 284.
Red-bellied, 273, 284, 313, 337.
Red-headed, 221, 239, 284, 323, 329, 351, 352, 405, 433, 459.
Rocky Mountain Hairy, 239.
Texas, 283.
Three-toed, 284.
White-headed, 283.
Wren, Bewick's, 286, 349, 350, 353.
Carolina, 286, 353, 414.
Florida, 278, 286.
House, 271, 286, 306, 313, 349, 351, 352, 436, 437, 447. 455-458 inclusive.
Long-billed Marsh, 286, 435, 447, 461.
Prairie Marsh, 334, 419.
Rock, 227, 242.
Short-billed Marsh, 312, 334.
Western House, 323, 334.
Winter, 306, 312, 334.
Xanthocephalus xanthocephalus, 240, 277, 285, 330, 444.
Xanthoœma hœmatocephala, 249.
Xenopicus albolarvatus, 283.
Yellow-legs, 238, 327, 353.
Greater, 224, 238, 327, 404, 405.
Yellow-throat, Maryland, 286, 351, 389, 406, 435, 447.
Western, 242, 334.
Zamelodia ludoviciana, 277, 285, 309, 332, 358, 359, 445.
melanocephala, 332, 359.
Zenaidura macroura carolinensis, 283, 439.
marginella, 238, 327.
Zonotrichia albicollis, 241, 285, 331.
leucophrys, 240.
gambeli, 331.
leucophrys, 331.
querula, 331.

PROVISIONAL ROLL OF THE WILSON ORNITHOLOGICAL CLUB.

(December 31, 1914.)

President, Dr. T. C. Stephens, Morningside, Sioux City, Ia.
Vice-President, Geo. L. Fordyce, Youngstown, O.
Secretary, Prof. T. L. Hankinson, Charleston, Ill.
Treasurer, P. B. Coffin, 3232 Groveland Ave., Chicago, Ill.
Editor, Lynds Jones, Oberlin, O.
Business Manager, Gerard Alan Abbott, 853 Marquette Road, Chicago, Ill.

Alaska.

Merrill, E. W., Sitka, Alaska. Assoc.

California.

Bunnell, Mrs. D. L., Univ. Calif. Coll. Agriculture, Berkeley.
Carringer, H. W., 5185 Trask Ave., Oakland. Act.
Chambers, W. Lee, Eagle Rock, Los Angeles. Act.
Daggett, Frank S., Museum Exposition Park, Los Angeles. Act.
Dawson, W. Leon, Rev., R. F. D. No. 3, Santa Barbara. Act.
Dickey, Donald R., Box 71, Pasadena. Act.
Grinnell, Dr. Joseph, Museum Vert. Zoölogy, Berkeley. Act.
Howell, Alfred B., Covina. Act.
Huey, Laurence M., 1703 Clay Ave., San Diego. Act.
Law, J. Eugene, Hollywood. Assoc.
Little, Luther, 1625 W. Adams St., Los Angeles. Assoc.
Newbury, F. E., 210 Post St., San Francisco.
Rich, Dr. Guy C., 1820 El Cerrito Place, Hollywood. Assoc.
Silliman, O. P., Castroville, Calif. Assoc.
Swales, Bradshaw H., La Jolla. Act.
Swarth, Harry S., Museum Hist. Science and Art, Los Angeles. Assoc.

Canada.

Arnold, Edward, 64 Duroeher St., Montreal.
Brown, W. J., 250 Olive Ave., Westmount, Quebec. Act.
Crow, Dr. J. W., Ontario Agric. College, Guelph, Ont. Act.
Dear, Lionel, Box 456, Fort William, Ont. Assoc.
Fleming, J. H., 267 Rusholme Road, Toronto. Act.
Gormley, A. L., Box 345, Arnprior, Ont. Assoc.
Johnson, Geo. S., Moose Jaw, Sask. Assoc.

Smithsonian Institution
APR 5 1915
National Museum

Johnson, Frank Edgar, care Mrs. R. P. Rodjuson, Victoria, P. E. I.
Kermode, Francis, Provincial Museum, Victoria, B. C.
Klug, A. B., Guelph, Ont.
Saunders, Wm. E., 352 Clarence St., New London, Ont. Act.
Schwartz, F. A., Berlin, Ont. Act.
Stansell, Sydney S., Manly, Alberta, Assoc.
Stone, R. E., Wellington Field Nat. Club, Guelph, Ont.
Taverner P. A., Victoria Museum, Ottawa. Act.
Terrill, Lewis McI., 21 Stanley Ave., St. Lambert, Quebec. Act.
Wallace, Jas S., 69 Front St. E., Toronto. Act.

COLORADO.

Henderson, Hon. Junius, Boulder. Act.
Lincoln, Frederick Charles, Col. Museum Nat. Hist., Denver. Asso.
Warren, Edward J., 20 W. Caramillo St., Colorado Springs. Act.

CONNECTICUT.

Bishop, Dr. Louis B., 356 Orange St., New Haven. Act.
Bruen, Frank, 65 Prospect St., Bristol. Act.
Buck, H. R., 36 Pearl St., Hartford. Act.
Case, C. M., 7 Holcomb St., Hartford. Assoc.
Ells, Geo. P., Norwalk. Act.
Holmes, Fred W., Jerome Ave., Bristol. Act.
Sage, John H., Portland. Act.
Saunders, Aretas A., West Haven, Box 65.
Smith, Elbert E., Edgewood, R. F. D., Bristol. Act.
White, W. F., Jr., Belle Haven, Greenwich. Assoc.

CUBA.

Ramsden, Chas. T., Apartado 146, Guantanamo. Act.
Read, A. C., Santa Barbara, Isle of Pines. Act.

DELAWARE.

Henderson, H. N., Wilmington. Assoc.
Kenworthy, E. M., 1125 West St., Wilmington. Act.

DISTRICT OF COLUMBIA.

Bailey, Mrs. Florence M., 1834 Kalorama Road, Washington. Act.
Bartsch, Dr. Paul, Smithsonian Institution, Washington. Act.
Brown, Edward J., U. S. National Museum, Washington. Act.
Cooke, Prof. Wells W., 1450 Fairmount St., Washington. Act.
Hollister, Ned, U. S. National Museum, Washington. Act.
McAtee, Waldo Lee, Biological Survey, Washington. Act.
Oberholser, Harry C., 1444 Fairmount St., Washington. Act.
Palmer, Dr. T. S., Biological Survey, Washington. Act.
Riley, J. H., U. S. National Museum, Washington. Act.
Ridgway, Prof. R., U. S. Nat. Mus., Washington. Hon.

FLORIDA.

Andrews, Miss Callista, Lake Alfred. Assoc.
Baynard, O. E., Clearwater. Act.
Nehrling, Prof. H., Palm Cottage, Gotha. Hon.

GEORGIA.

Erickson, W. J., 208 W. 40th St., Savannah. Assoc.

IDAHO.

Winslow, A. N., Moscow.

ILLINOIS.

Abbott, Gerard Alan, 853 E. 66th St., Chicago. Act.
Armstrong, Edward E., 2148 N. Sawyer Ave., Chicago. Act.
Barnes, Hon. R. M., Lacon. Act.
Buchner, Mrs. E. M., Chicago. Act.
Coffin, Percival Brooks, 3232 Groveland Ave., Chicago. Act.
Craigmile, Miss Esther A., 24 S. Grant St., Hinsdale. Act.
Davidson, Mrs. F. S., 1302 W. S. Grand Ave., Springfield. Assoc.
Deane, Ruthven, 112 W. Adams St., Chicago. Act.
Dodson, Joseph H., 189 Madison St., Chicago. Assoc.
Eifrig, Prof. C. W. G., Concordia College, Oak Park. Act.
Ekblaw, Geo. S., R. F. D. No. 23, Rantoul. Assoc.
Ekblaw, W. Elmer, 809 W. Main St., Champaign. Act.
Ford, Edward R., 537 S. Dearborn St., Chicago. Act.
Gault, Benj. T., Glenn Ellyn. Act.
Hamilton, Dr. B. A., Highland Park.
Hankinson, Thos. Leroy, Charleston. Act.
Hess, Isaac E., Philo. Act.
Hunt, Cresswell, Jr., 740 S. Cuyler Ave., Oak Park. Act.
Jesse, Dr. R. L., Philo. Act.
Kahmann, F. W., 2457 Lincoln Ave., Chicago. Act.
Lincoln School, 2324 Larrabee St., Chicago. Assoc.
Mitchell, Catherine Adams, Riverside. Assoc.
Ohlendorf, Dr. W. C., 1922 Blue Island Ave., Chicago.
Osgood, Prof. Wilfred H., Field Museum Nat. Hist., Chicago. Act.
Raymond, Mrs. C. E., 21 3d St., Hinsdale. Assoc.
Richards, Chas. C., 6549 Minerva Ave., Chicago. Act.
Sammons, B. C., 461 Maple Ave., Blue Island. Assoc.
Sanborn, Collin C., 224 East Park Ave., Highland Park. Act.
Schantz, Orpheus M., 5215 W. 24th St., Cicero. Act.
Schantz, Mrs. O. M., 5215 W. 24th St., Cicero. Act.
Schafer, J. J., R. F. D. No. 1, Port Byron. Assoc.
Smith, Jesse Lowe, Highland Park.
Smith, Prof. Frank Smith, Univ. of Ill., Urbana. Act.
Sparks, Miss Marion, 1205 Springfield Ave., Urbana. Assoc.
Stevenson, A. L., 2324 Larrabee St., Chicago. Act.

Visher, S. S., 64 Snell Hall, Univ. of Chicago, Chicago. Assoc.
Wheelock, Mrs. Irene G., 1040 Hinman Ave., Evanston. Act. Sust.
Wilson, Burtis H., 217 Safety Bldg., Rock Island. Act.
Wing, DeWitt C., 5401 Dorchester Ave., Chicago. Assoc.
Woodruff, Frank C., Acad. of Sciences, Lincoln Park, Chicago. Act.

INDIANA.

Butler, Amos W., 93 State House, Indianapolis. Act.
Chambers, Mrs. Stella, Marco, Greene Co. Assoc.
Norris, Roy C., 725 N. 10th St., Richmond. Act.
Stockbridge, Chas. A., 2323 Webster St., Fort Wayne. Assoc.

IOWA.

Abel, Arthur R., 1301 Newton Ave., Sioux City. Act.
Allen, A. F., 2224 Pearl St., Sioux City. Assoc.
Anderson, A. J., 1822 W. Palmer Ave., Sioux City. Assoc.
Bailey, Dr. B. H., Coe College, Cedar Rapids. Act.
Baird, Miss Alice A., 308 E. State St., Marshalltown. Assoc.
Bennett, Rev. Geo., Iowa City. Assoc.
Bennett, Walter W., 1826 Rebecca St., Sioux City. Assoc.
Bigglestone, Harry C., Laurens. Act.
Carter, Chas., Prof., Parsons College, Fairfield. Act.
Chipperfield, Paul C., 1322 S. Newton St., Sioux City. Assoc.
Cooper, D. C., 3815 3d Ave., Sioux City. Assoc.
Denny, Milo B., Cedar Rapids.
Dill, Prof. Homer R., Room 10, New Science Bldg., Iowa City. Act.
Fields, E. A., 2111 Douglas St., Sioux City. Act.
Gabrielson, Ira N., High School, Marshalltown. Act.
Gabrielson, Rush, 1204 S. Newton St., Sioux City. Assoc.
Giehm, Helen, 3515 Sixth Ave., Sioux City. Assoc.
Hackett, Noel L., Onawa. Assoc.
Hartray, Mrs. J. W., 1602 Douglas St., Sioux City. Assoc.
Hatch, Miss Mary H., McGregor. Assoc.
Hayden, F. J., 1212 Douglas St., Sioux City. Assoc.
Hayward, W. J., 2919 Jackson St., Sioux City. Act.
Heddon, Rev. R. G., Jewell. Assoc.
Himmell, W. J., High School, Ida Grove. Assoc.
Hood, Miss Adah, 1002 Ninth St., Sioux City. Assoc.
Jarvis, Raymond, 112 N. 4th St., Marshalltown. Assoc.
Johns, H. A., 1904 Court St., Sioux City. Act.
Johns, E. W., Kingsley. Act.
Kempkes, Jay A., Pella. Act.
Kimberly, Miss Anna Maud, care Public Lib., Marshalltown. Assoc.
Kinsley, Miss Harriet, McGregor. Assoc.
Lazell, Mrs. Anna B., 1557 Washington Ave., Cedar Rapids.
Lazelle, Fred J., 1557 Washington Ave., Cedar Rapids.
Loughlin, Miss Rosemary, 816 W. Cherry St., Cherokee. Assoc.

Manley, Mrs. W. P., 1101 Jones St., Sioux City. Assoc.
Messenger, G. H., Linden. Act.
Mills, Weir R., Pierson. Assoc.
Morgan, Miss Kathryn L., 303 E. State St., Marshalltown. Assoc.
Orr, Ellison, Waukon. Act.
Pellett, Frank C., Atlantic. Act.
Perkins, Lucius M., 212 University Ave., Shenandoah. Assoc.
Ridgway, Miss Joy, Plymouth. Assoc.
Schatz, A. H., Merril. Assoc.
Seelover, Miss Louise, Sioux City. Assoc.
Sherman, Miss Althea R., R. F. D. No. 2, McGregor. Act.
Smith, Arthur E., Little Rock. Act.
Spurrel, John A., Wall Lake. Assoc.
Stephens, T. C., Morningside College, Sioux City. Act.
VanderVeen, Francis, Somers. Assoc.
Whitney, Thos. D., Atlantic. Act.
Wilson, Max J., Sigma Nu House, Iowa City. Assoc.

KANSAS.

Jeffs, R. E., 603 S. Fern Ave., Witchita. Assoc.
Keezel, Mrs. Clara Cozad, Garnett. Assoc.
Love, Guy, Oberlin. Assoc.
Mitchell, Dr. Walton I., 60 Beacon Bldg., Witchita. Act.
Peabody, Rev. P. B., Blue Rapids. Act.
Stephens, E. G., 950 State Ave., Kansas City. Assoc.
Sweeney, J. A., care Forest Service, Garden City. Act.

LOUISIANA.

Guion, George Seth, Napoleonville. Act.

MAINE.

Stanwood, Cordelia J., Ellsworth. Act.

MASSACHUSETTS.

Allen, Dr. Glover M., 16 Louisburg Sq., Boston. Act.
Baker, John H., 7 Holyoke Pl., Cambridge. Assoc.
Bent, Arthur C., Taunton. Act.
Brewster, William, 145 Brattle St., Cambridge. Act.
Chamberlain, C. W., 36 Lincoln St., Boston. Assoc.
Deane, Walter, 29 Brewster St., Cambridge. Act.
Durfee, Owen, Box 125, Fall River. Act.
Field, Irving A., Clark College, Worcester. Assoc.
Jenney, C. F., Court House, Boston. Assoc.
McKechnie, Frederick B., Ponkapog. Deceased.
Osborne, Arthur A., 58 Washington St., Peabody. Assoc.
Thayer, Hon. John E., Box 98, Lancaster. Act.
Trowbridge, Chas., Framingham, Station A.
Tyler, Dr. Windsor M., 522 Massachusetts Ave., Lexington. Act.

Winslow, A. M., 3 Lyford St., Worcester.
Wright, Horace W., 107 Pinckney St., Boston. Assoc.
Ballard, Prof. H. H., Pittsfield. Hon.

MICHIGAN.

Barrows, Prof. Walter B., Agricultural College, East Lansing. Act.
Blain, Dr. Alex. W., Jr., 1105 Jefferson Ave., Detroit. Act.
Eddy, N. A., Craps Bldg., Bay City. Assoc.
King, Helen B., 616 S. Weadock Ave., Saginaw. Assoc.
Mershon, Wm. B., Saginaw. Act.
Newcomb, C. A., Jr., Newcomb, Endicott Co., Woodward Ave., Detroit. Assoc.
Stuart, F. A., Marshall. Assoc.
Tinker, A. D., 342 S. State St., Ann Arbor. Act.
White, W. F., Jr., care Mich. Limestone & Chem. Co., Rogers.
Wood, J. Claire, 179 17th St., Detroit. Act.
Wood, Norman A., 1216 S. University Ave., Ann Arbor. Act.
Wright, Miss H. H., 1637 Gratiot Ave., Saginaw Ave., W. S. Assoc.

MINNESOTA.

Bailey, Bernard, R. F. D. No. 1, Elk River. Act.
Bond, Harry L., Lakefield. Assoc.
Kretzmann, Prof. P. E., 1230 St. Anthony Ave., St. Paul. Act.
Roberts, Dr. Thos. S., 1603 4th Ave., Minneapolis. Act.

MISSISSIPPI.

Strong, Dr. Reuben M., Univ. of Miss., University. Act.

MISSOURI.

Harris, Harry, 901 Armour Boul., Kansas City. Act.
Hoffman, Ralph, 11 W. Concord Ave. Kansas City. Act.
McNeil, Dr. Chas. A., Sedalia. Act.
Pardee, Gladys S., Tarkio. Assoc.
Widmann, O., 5105 Morgan St., St. Louis. Honorary.
Wilson, Sidney S., German Ave. Bank Bldg., St. Joseph. Act.

NEBRASKA.

Dawson, Prof. R. W., 1105 N. 33d St., Lincoln. Act.
Stevens, Dr. J. F., Box 546, Lincoln. Assoc.
Swenk, Prof. Myron H., 3028 Starr St., Lincoln. Act.

NEW HAMPSHIRE.

Townsend, Rev. Manley B., Nashua. Act.

NEW JERSEY.

Curtis, Harold, 376 Summer Ave., Newark, N. J. Assoc.
Evans, William B., 205 E. Central Ave., Moorestown. Assoc.
Grant, W. W., Englewood.

Holmes, Mrs. Georgiana K., Summit. Act.
Howland, R. H., Upper Montclair. Act.
Kohler, Louis H., 98 Watressing Ave., Bloomfield. Assoc.
Potter, J. K., 6th and Bailey Sts., Camden.

NEW YORK.

Abbott, Clinto G., 153 W. 73d St., New York. Act.
Adams, Mrs. John D., Bay Shore, Long Island. Assoc.
Braislin, Dr. Wm. C., 556 Washington Ave., Brooklyn. Act.
Burtch, Verdi, Branchport. Act.
Chapman, Frank M., Amer. Mus. Nat. Hist., New York. Act.
Childs, John Lewis, Floral Park. Act.
Crosby, Maunsell, Grasmere, Rhinebeck. Act.
Dwight, Dr. Jonathan, Jr., 134 W. 71st St., New York. Act.
Eastman, Francis B., Plattsburg Barracks. Act.
Fisher, Prof. G. Clyde, Amer. Mus. Nat. Hist., New York. Act.
Fuertes, Louis Agassiz, Cornell Heights, Ithaca. Act.
Hall, F. H., Geneva. Act.
Hix, Geo. E., 114 W. 90th St., New York. Act.
Hoag, Benj., Stephantown. Assoc.
Johnson, Frank Edgar, 16 Amackassin Terrace, Yonkers. Assoc.
Keeler, S. L., Box 473, Scarsdale. Assoc.
Kuser, John Dryden, 908 5th Ave., New York. Act.
McCreary, Otto, Agricultural Exp. Station, Geneva. Assoc.
Phillip, P. B., St. Paul Bldg., 220 Broadway, New York. Assoc.
Rogers, Chas. H., 5 W. 82d St., P. O., S. W., New York. Act.
Van Wagner, Millard, Saltpoint, R. F. D. Act.

NORTH CAROLINA.

Metcalf, Prof. Zeno P., A. and M. College, Raleigh. Act.

NORTH DAKOTA.

Danforth, Stuart L., East Joffrey. Assoc.
Ford, Rev. Eugene C., 1017 Seventh St. North, Fargo. Assoc.
Larson, Adrin, Keene. Act.

OHIO.

Baird, Robt. L., Troy. Act.
Bales, Dr. B. R., Circleville. Act.
Beardsley, R. W., North Wood St., Loudonville.
Brandt, H. W., care The Brandt Co., Sheriff St. Market, Cleveland. Assoc.
Brown, Harry W., Glendale.
Burton, Rev. William Wallace, Alliance. Assoc.
Cook, Orange, Chardon. Assoc.
Doolittle, E. A., Box 444, Painesville. Assoc.
Edgerton, Miss Alice, Columbian. Assoc.

Floyd, Joseph L., 508 New Harter Bank Bldg., Canton.
Ford, F. E., Chardon. Assoc.
Fordyce, Geo. L., 40 Lincoln Ave., Youngstown. Act.
Giddings, L. A., 370 Howell Ave., Cincinnati. Assoc.
Goodrich, Calvin, 2421 Glenwood Ave., Toledo. Assoc.
Henderson, H. N., Wilmington.
Henninger, Rev. W. F., New Bremen. Act.
Hine, Prof. James S., Ohio State Univ., Columbus. Act.
Hopkins, A. W., M.D., 47 McGovern Ave., Ashtabula. Assoc.
Jones, Dr. Howard, Circleville. Act.
Jones, Dr. Lynds, Spear Laboratory, Oberlin. Act.
Kean, Miss Laura, Stockport. Assoc.
Kellogg, H. W., 39 Jefferson Ave., Columbus. Assoc.
Kent State Normal School, Kent. Assoc.
Kimes, Edward D., 811 High Ave., S. W., Canton. Assoc.
King, Rev. J. W., 411 Dueper Ave., Canton.
McConnell, Harry B., Cadiz. Act.
Mills, Prof. Wm. C., Ohio State Univ., Columbus. Act.
Morris, C. H., McConnelsville. Act.
Morse, Harry G., Huron. Act.
Ohio State Archæological and Historical Society, 15th and High, Columbus.
Phelps, Frank M., Elyria. Act.
Roads, Miss Katie M., 463 Vine St., Hillsboro. Assoc.
Roper, Kenyon, 509 N. 4th St., Steubenville, Assoc.
Scott, Mrs. R. T., 603 N. 7th St., Cambridge. Assoc.
Shankland, F. N., Willoughby. Assoc.
Showalter, Ben R., 88 Victor Ave., Dayton. Act.
Sorver, Rex A., R. F. D. No. 3, Sidney. Assoc.
Warner, Willis H., R. F. D. No 2, Canfield. Assoc.
Wilson, Herrick C., Oberlin.
Wilson, Mrs. Julia W., Oberlin.
Young, John P., 1510 5th Ave., Youngstown. Act.

OREGON.

Walker, Alex., Mulino. Act.

PENNSYLVANIA.

Ball, Dr. J. P., 4445 Frankford Ave., Philadelphia. Act.
Benners, Archie, Ambler. Act.
Benners, G. B., Ambler. Act.
Burleigh, Thos. D., 825 N. Negley Ave., Pittsburgh. Assoc.
Burns, Frank L., Berwyn, Pa. Act.
Dickey, Samuel S., 31 South West St., Waynesburg. Assoc.
Fisher, Miss E. W., 2222 Spruce St., Philadelphia. Act.
Hamilton, Earle, 400 Walnut St., Versailles, via McKeesport. Assoc.
Honywill, Albert W., 523 Holmes St., Wilkinsburg. Assoc.

Jackson, Thomas H., 304 N. Franklin St., Westchester. Act.
Jacobs, J. Warren, Waynesburg. Act.
Keim, Dr. Thos. D., 405 Radcliffe St., Bristol.
Mercur, J. Watts, Jr., Wallingford. Act.
Miller, Richard F., 2069 E. Tioga St., Philadelphia. Act.
Norris, Joseph Parker, Jr., 2122 Pine St., Philadelphia. Act.
Reed, Alex., 123 East Maiden St., Washington. Assoc.
Sharpless, Robert P., Westchester. Act.
Thomas, W. F., 316 Frick Bldg., Pittsburgh. Act.
Todd, W. E. Clyde, Carnegie Museum, Pittsburgh. Act.

PHILIPPINE ISLANDS.

McGregor, Richard C., Bureau of Science, Manila. Act.

RHODE ISLAND.

Flanagan, John H., 89 Power St., Providence. Act.
Hathaway, Harry S., Box 1466, Providence. Act.
Walter, Dr. Herbert E., Brown Univ., Providence. Act.

SOUTH DAKOTA.

Mallory, W. B., Lennox, S. D. Assoc.
Wickens, G. Ernest, Avon. Assoc.

TENNESSEE.

Gray, D. R., Rockdale, Maury Co. Assoc.

TEXAS.

Pope, E. T., Colmesneil.
Shearer, Dr. A. R., Mont Belvieu, Chambers Co. Act.
Simmons, G. Finley, 622 First Nat. Bank Bldg., Houston. Act.

UTAH.

Goodwin, Rev. S. H., Provo. Assoc.
Treganza, A. O., U. S. and T. Bldg., Salt Lake City. Assoc.

VIRGINIA.

Bailey, H. B., Newport News. Act.
Bailey, H. H., Newport News. Act.

WASHINGTON.

Skinner, H. H., 234 Mitchell Bldg., N. Yakima. Act.
Rathbun, S. F., 217 14th Ave., N. Seattle. Act.

WEST VIRGINIA.

Price, Ligon, R. F. D. No. 1, Box 44, Dunmore.

WISCONSIN.

Cahn, A. R., Dept. Zoölogy, Univ. of Wisconsin, Madison. Act.
Cleasby, E. A., Portage. Act.

Glenn, Elma G., Wyalusing. Assoc.
Malin, Mrs. Joda, Wyalusing. Assoc.
Simpson, Mrs. Mark L., 1340 Grand Ave., Milwaukee. Assoc.
Snyder, Will Edwin, 309 De Clark St., Beaver Dam. Assoc.
Wagner, Prof. Geo., 73 Biol Bldg, Madison. Act.
Wilcox, H. B., R. F. D. No. 1, Box 10A, North Racine.

The considerable time which has elapsed since the last published list of members makes it necessary to first issue this provisional list in order that it may be examined by every member for the purpose of having all mistakes in spelling and addresses corrected. Will you not aid the officers in their task of making an accurate membership roll by notifying President T. C. Stephens of any errors which you may detect?

A provision of our Constitution makes it optional with every member whether he will be an Active or an Associate member. Please indicate your preference in this matter to President Stephens.

CONSTITUTION AND BY-LAWS OF THE WILSON ORNITHOLOGICAL CLUB

Article I.

Name and Object.

Section 1. This organization shall be known as The Wilson Ornithological Club.

Section 2. The object of this Club shall be the promotion of Ornithology, especially in Middle North America.

Article II.

Membership.

Section 1. The membership shall consist of Active, Associate and Honorary Members. Only Active members may vote or hold an elective office.

Section 2. Election of Members.

Clause A. Nominations for membership must be made through the Secretary.

Clause B. Members may be admitted at the annual meeting by a majority vote of the Active members present.

Clause C. Recommendations for Honorary Membership may be made only by Active members, and they must be accompanied by statements concerning the eligibility of the person recommended.

Clause D. Any member may become a Sustaining member by making an annual payment of five dollars.

Section 3. Annual Dues.

Clause A. The annual dues of Active members shall be two dollars, of Associate members one dollar. All dues shall be payable in advance during the month of January.

Clause B. One dollar of membership dues shall be applied to subscription to the Wilson Bulletin.

Section 4. Any member in arrears for dues one year may be dropped from the roll of members at any meeting, by a majority vote of the Active members present.

Article III.

Officers.

Section 1. The officers shall be a President, a Vice-President, a Secretary, and a Treasurer. Officers shall hold office for one year, or until their successors are elected. These officers shall constitute a Council. Their terms of office shall begin at the close of the meeting at which they are elected.

Section 2. Duties of Officers.

Clause A. The President shall preside at all meetings, appoint such committees as are not otherwise designated, and have general oversight and direction of the officers and business of the organization.

Clause B. In the absence or disability of the President the Vice-President shall act in his stead.

Clause C. The Secretary shall keep a record of the proceedings, keep a file of the members, conduct the official correspondence, and send out notices under the direction of the President.

Clause D. The Treasurer shall collect and disburse the funds of the Club as directed by the Council, and notify the members in regard to dues.

Section 3. Officers shall be elected at the annual meeting by a majority vote of the Active members present.

Section 4. Vacancies in the board of officers, occurring by death, resignation, or otherwise, may be filled by appointment of the Council, but the person so appointed shall hold office only until the close of the next meeting of the Club.

Article IV.

Meetings.

Section 1. An Annual Meeting shall be held at a time and place to be determined by the Council.

Section 2. Nine Active members shall constitute a quorum.

Section 3. This organization shall be governed by "Roberts Rules of Order."

Section 4. Special meetings may be called by a majority of the Council, or by not less than 25 Active members.

Article V.

Accounts.

A committee of two shall be appointed at each annual meeting

whose duty it shall be to audit the accounts of the Treasurer for the year closing with that meeting.

Article VI.

By-Laws.

Section 1. By-laws recommended by the Council or by at least three Active members may be adopted at any meeting by a majority vote of the Active members present.

Section 2. By-laws may be repealed at any meeting, upon recommendation of the Council, or of at least three Active members, by a majority vote of the Active members present.

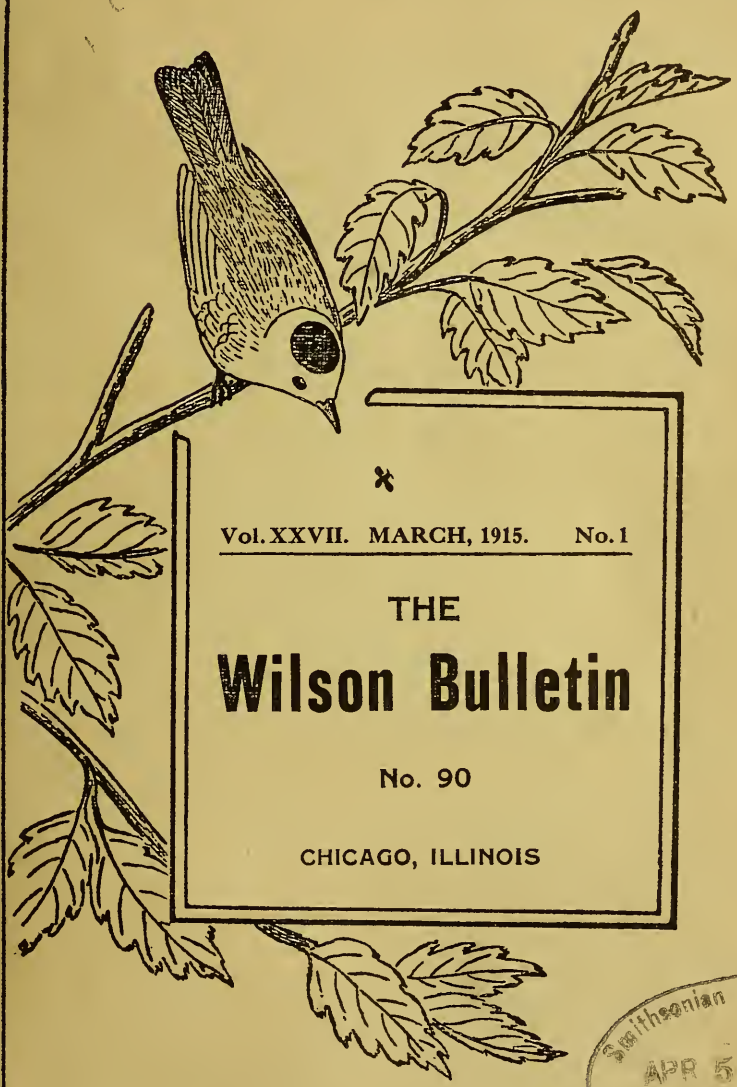
Article VII.

Amendments.

Amendments to the Constitution recommended by the Council, or by at least three Active members, may be adopted at the next annual meeting following the meeting at which they are offered by an affirmative vote of two-thirds of the members present.

By-Laws.

1. The order of business shall be as follows:
   Roll call of Active members.
   Reading of minutes.
   Reading of correspondence.
   Appointment of Committees.
   Reports of officers.
   Election of members.
   Old business.
   New business.
   Election of officers.
   Reading of papers.
2. The following committees shall be appointed at the annual meeting:
   (1) a committee of three on nominations;
   (2) a committee of three on resolutions;
   (3) a program committee of which the Secretary shall be chairman.
3. Any member three months in arrears for dues shall be ineligible to vote or to hold an elective office.
4. The official organ of publication shall be The Wilson Bulletin.
5. An editor and a business manager for the official organ shall be appointed by the Council. These shall be *ex-officio* members of the Council.



Vol. XXVII. MARCH, 1915. No. 1

THE

Wilson Bulletin

No. 90

CHICAGO, ILLINOIS

Smithsonian Institution
APR 5 1915

WILSON ORNITHOLOGICAL CLUB

CONTENTS

June Birds of Laramie, Wyoming . W. F. Henninger 221

Birds By the Wayside . . . . Althea R. Sherman 243

Birds About a Country Home . . . Alice Edgerton 272

position and Incubation . . . . Frank L. Burns 275

itorials 287

eld Notes 288

THE WILSON BULLETIN

published on the fifteenth of March, June, September, and December, by the Wilson Ornithological Club at Chicago, Ill., edited by Lynds Jones, Oberlin, Ohio.

Subscription: One Dollar a year, including postage, *strictly in advance.* Single numbers, 30 cents, unless they are "Special" numbers, when a special price is fixed. The Bulletin, including all "Special" numbers, is sent to all paid up members, either Active or Associate, after their election, it being understood that one dollar out of the annual dues paid by members is for the Bulletin.

Subscriptions may be addressed to P. B. Coffin, 3232 Groveland Avenue, Chicago, Ill.

Advertisements should be addressed to The Wilson Bulletin, 943 Marquette Bldg., Chicago, Ill. Terms will made known upon application.

All articles and communications intended for publication, and all publications and books for review, should be addressed to Lynds Jones, Oberlin, Ohio.

Articles of general interest relating to bird life are solicited. They should be in the hands of the editor not later than the fifteenth of the month preceding publication.

Authors of articles, other than "Field Notes," or short items of a general nature, will receive 25 bound reprints free of charge. Additional bound reprints of articles comprising 16 pages or less may be had at the following rates: 25 additional copies, $1.50; 50 additional copies, $2.00; 75 additional copies, $2.50.

Entered as Second Class Matter, May 21, 1914, at the Postoffice at Chicago, Ill., under the Act of March 3, 1879.

THE WILSON BULLETIN

NO. 90.

A QUARTERLY JOURNAL OF ORNITHOLOGY

VOL. XXVII MARCH, 1915. NO. 1

OLD SERIES VOL. XXVII. NEW SERIES VOL. XXII.

JUNE BIRDS OF LARAMIE, WYOMING.

(The Story of a Vacation Trip.)

BY W. F. HENNINGER

My long desired vacation had come. For some time I had been looking for a new ornithological field, for one tires of sameness, besides I wished to study some species in nature in order to be able to describe them accurately in my work. So I had finally concluded to go to Wyoming and try my luck there. A careful perusal of Professors Knight's "Birds of Wyoming" convinced me that some work might be done there and some new observations might be made. May 26 found me on the train to Chicago where I spent a few delightful hours with my friend Eifrig and the next day I was speeding across the plains of Illinois, Iowa, and Nebraska.

As the train left North Platte on the morning of the 28th and stopped at some smaller stations I saw the Western Meadowlark and heard for the first time its beautiful liquid note. Along the Platte river was a Great Blue Heron, a flock of wild ducks and a few Sandpipers, which I could not identify. Cheyenne was reached at 3 p. m., but it was on a later visit to this place on June 11th that I could see the Bronzed Grackle and the Red-headed Woodpecker of true Eastern species. The real climb towards the divide then

began and up on the crest, at Sherman, at the height of 2700 metres, I saw on a mountain meadow, through which a little brook gushed down the valley, the first Brewer's Blackbirds preening their glossy blue-black plumage in the sun. Close to the track were many gophers, prairie dogs and, as luck favored me, not more than 10 metres away sat a Burrowing Owl and looked undisturbed at the long overland train. And then we swung around a sharp curve to begin the descent into the Laramie Plains, 190 kilometres long, an almost perfect oval of dusty, dark green, rolling prairie, with a broad silvery band, the Laramie River meandering through its center. To the east rose the long sloping barren Laramie Mountains at the end of which in the hazy distance 96 kilometres away there stood the Laramie Peak 3650 metres high, while to the West a gloomy and dark wall of mountains, overtopped by a number of shining white crags and shimmering icy peaks, gilded by the sun's fiery rays seemed in their sublime and colossal majesty to forbid all attempts of frail man to conquer them.

And the train sped on. Back of us, to the South, Colorado's icekings formed a perfect barrier. Distance immense and endless before us to the North as the boundless prairie met our eyes. Down shot the train at terrific speed, then a squeaking of wheels, a hissing of airbrakes and slowly we rolled into the typical western town of Laramie. There my friend, Rev. O. Wichmann, who with his two sons Arthur and Gerhold helped me in many ways during my stay, met me and conducted me to my headquarters. On the way through town I was everywhere greeted by the merry twittering of the House Finches in their beautiful rose-colored garb, reminding me of the European Chaffinch, but alas! in the dusty street fighting and chirping, that miserable ruffian, the English Sparrow, who had come to stay.

In spite of the long and tiresome trip the cool mountain air and the glorious sun chased me out of bed rather early on the next morning and after the unpacking of my outfit I sauntered along some of the streets with their cotton-wood

trees, their sand and their general unfinished appearance. House Finches everywhere and I stood and watched them for hours. In the City Park a block away a Western Meadowlark was pouring forth its melody towards the sun's golden orb. A walk of two minutes and I was on the open prairie, gophers whisked away and running on the ground between their burrows, Desert Horned Larks. Slowly I wandered to the Union Pacific Ice Plant with its Reservoir and to the Laramie River. The unusually early spring had caused the waters to rise and the whole valley was overflowed. Desert Horned Larks and Meadowlarks seemed to be found on all sides and among them I saw my first McCowns Longspurs. A few steps farther and I ran on to a pair of the beautiful

Nests of Cliff Swallow.
Laramie, Wyo., June 13, 1914.

Lark Buntings, a bird that is rather rare in this whole region west of the border chain of the Rockies. Now a new sight attracted my attention. Over the river a cloud of small birds was hovering and I hastened over there almost running

over a prairiedog, who slunk barking angrily away into his hole. The cloud swooped to my head and with perfect ease I could make out that it was Violet-green Swallows. New species on every side and I was hardly through making a good study of one, then another one would loom up and seemed to make the request to be studied and identified. At last I spied some old acquaintances: several Killdeer, one Greater Yellow-legs standing on guard like a German sentinel and another enormous flock of swallows alighting to gather up mud—Eave Swallows. Altogether I never did see as many swallows in all my life as I saw here in Laramie in four weeks. Finally I strolled towards my headquarters and there on a telephone post, warbling sweetly, though not very loudly, sat a Mountain Bluebird. I stood in perfect amazement. I looked again but across the street sat two more and farther on was another one warbling, and then I wondered what had induced my dear old friend Dawson to write in his "Birds of Washington" the entire song tradition of the Mountain Bluebird, including the "delightful warble" of Townsend appears to be quite without foundation etc." I sat down on a somewhat dilapidated lumber pile. I was going to watch those Bluebirds very closely. Altogether I watched three pairs of them and there was certainly a sweet delightful warble coming from those throats. So after all Townsend was right and Dawson is wrong. And I may add that I watched Bluebirds in Laramie every day during my stay and in Rev. Wichmann's yard where they built their nest the male would sing on top of the nesting box and warble often for 15 minutes at a time. *Yes indeed the Mountain Bluebird has a delightful warble*; although it does not quite come up to that of our eastern Bluebird in power and sweetness. At last I got back to the house and here in the yard was a White-throated and two White-crowned Sparrows but of course I could not make out whether it was *leucophrys* proper or the subspecies. Another short stroll added the Western Chipping and the Clay-colored Sparrows to my list of birds observed.

The town of Laramie itself furnished quite a number of species not found on the prairie or in the mountains. The first day I saw my only pair of Bullock's Orioles right in the cotton-wood trees and after that although I searched for them carefully I never saw them again. In town too was the only place I saw the Broad-tailed Hummer in the gardens among the flowers, the Hammond and the Alder Flycatcher, the Western Goldfinch, the Batchelder's Woodpecker and others.

May 30th found us on the road towards the Laramie Mountains. This was the warmest day I experienced, the

Nest and eggs of Wilson's Phalarope.
Carroll Lakes, Wyo., June 12. 1914.

thermometer showing 82 degrees in the shade and the natives sweltered, while I of course thought it delightfully cool. At first we had two miles of gophers and prairiedogs with one Burrowing Owl, one Sparrow Hawk and innumerable Mourning Doves till we got to the City Springs. Here we ran on to a colony of Bank Swallows, a flock of Brewers Blackbirds, a Kingbird and a fine specimen of the Arkansas Kingbird. Just beyond the City Springs the bare rock stuck out and ran for about six miles in a kind of a barren plateau.

The solid rock was varied only by greasewood and cactus, with which I got a somewhat painful acquaintance at first, growing out of the crevices. To the right of us ran a long canyon, the sides of which were densely covered with greasewood and here I recognized at once the song of the Western Vesper Sparrow by its similarity to that of the eastern variety which exceeds it in sweetness. In between there arose a stronger, more trilling song and soon I noticed the performer, but he was exceedingly difficult to get at and identified it as a Brewer's Sparrow. Once known it is not quickly forgotten. We wandered on, the shrubs grew denser, great beds of flowers with the most intense and glowing colors, dark indigo blue, yellow, scarlet, red and white, in such exquisite purity as I had never seen them before, shone in the bright sunlight, and all of a sudden there burst forth from the dreary greasewood a song of great power and glory. I listened attentively. Surely they were Thrasher notes and at last I caught sight of the songster—a fine Sage Thrasher. I had read much about the vocal powers of this bird and he certainly is a fine songster. Still I would not place his best performance above that of a good Catbird. On the other hand in that sterile waste in which he lives he helps to put life, beauty and melody into a wilderness and that may have helped to extol his vocal powers somewhat above the standard which they really attain. But after all we should be thankful that he has been placed in these desolate places.

And again there was a change in the landscape. There was a peculiar odor in the air, great beds of sage appeared now and from the midst of it there came still another song not as powerful as that of the Sage Thrasher, but stronger and more beautiful than that of the Brewer's Sparrow. Everywhere in this region it was tinkling in the air and coupled with that of the Thrasher and the Brewer's Sparrow I had quite a concert. Their plain gray garb made identification easy and I had great delight in watching these Sage Sparrows. In all my travels through the Sage brush however I was unlucky in not finding that bird otherwise so com-

mon in Wyoming, the Sage Grouse, just as I missed the Blue Grouse of the Mountains.

Now the ground began to rise and the traveling became more laborious. As the echo of one of my shots rolled along the canyon a great Horned Owl flew out of a Juniper-tree up to the next canyon. Then came the first pines, one of them showing three holes, one occupied by a Sparrow Hawk, one by a Red-shafted Flicker and one by a swarm of bumblebees. Here we rested for a while, examined the nest of a Mourning Dove in the crevice of a rock down so deep that no prowling coyote could ever reach it, and saw two majestic birds come sailing over the crest of the nearest canyon, one of them alighting in a tree and enabling us to see that it was that glorious bird, the Ferruginous Rough-leg, a pair of which had their nest at the chimney rocks near the Colorado boundary 32 kilometres away. The canyon showed some steep sides farther up and in going down one of these we noticed that the Western Robins were to be found even up here 3000 metres high. On a dry limb overhanging a deep gorge sat a Townsend Solitaire unfortunately absolutely silent and although I had hoped to hear the song of this bird I was disappointed. Loudly scolding against my intrusion was a Rock Wren and from under my feet there slipped out the beautiful Green-tailed Towhee. While still watching him, right above me I heard the well known quavering note of the Warbling Vireo and in the pines at my side Audubon's Warblers flitted back and forth, Mountain Chickadees and Red-breasted Nuthatches were climbing and hopping from limb to limb. Quite a long time we whiled away here and studied these interesting forms of bird life.

Then came the descent, I not wishing to climb to the top at this time. Overhead sailed a Turkey Vulture and at some water hole on the plateau I shot a lone Mountain Plover, the only one I saw during my stay and I had been induced to believe through Knight's book that they were common all over the Laramie Plains. Tired from this tramp of some 48 kilo-

metres up and down the mountain sides we reached home without any further interesting observations.

Sunday I enjoyed an automobile trip to the State Fish Hatchery and of course was not surprised to find a Kingfisher there watching the brook trout with a covetous eye. Monday in a drizzling rain I concluded to try some of the swampy places almost within the city limits. Ringbilled Gulls, Mallards and an occasional Crow were flying over the river and at the first small pond I saw a fine female of the Wilson's Phalarope standing with head erect displaying its beautiful colors. A little farther on among a number of Red-winged

Nest of Yellow-headed Blackbird.
Laramie, Wyo., June 6, 1914.

Blackbirds two more showed up, a pair, and then the air seemed to be alive with them. "Most exasperating fowl" Dawson calls them and to be sure they were. They came and they went, sometimes silently, sometimes with a melodious flute-like note. Now they were swimming gracefully, now gathering food with a continuous nodding of the head, again stalking along the shore eyeing everything with suspicion and then disappearing. I watched them for hours. When all had disappeared I walked ahead and here they were again

circling around me reminding me in their flight sometimes of the Woodcock and then again of the Teal. Truly their nest was there somewhere in this swampy overflowed tract of several hundred acres but it was futile to attempt to find it. Besides had not Milton S. Ray hunted for years before he found the nest, and had not Dawson despaired of ever finding it? Why should I be more fortunate?

The next few days I spent in preparing specimens, for the State Superintendent of Public Instruction, Miss Rose Bird Maley, had graciously granted me a permit for scientific collecting. And then I had to visit the Museum of the Wyoming University and there I surely met Wyoming's grand

Nest and eggs of Yellow-headed Blackbird.
Laramie, Wyo., June 6, 1914.

old man in the person of Professor W. H. Reed, congenial and courteous in every way. It was a pleasure to listen to his stories of his participation in all of the Indian wars in this western region, or of his success in finding fossils and, surrounded by the monstrous Dinosaurs, to hear how he found the prehistoric Camel not larger than a Dachshund, how he discovered the only three heads of the Triceratops, the credit for which he never got in the works of those who used his

material. And how he does know the Mammals and Birds, the Insects and other animals of this region! Truly it was a revelation within itself to listen to this man and many thanks do I owe him for directing me and helping me in my work while out there. The University of Wyoming owes much to him indeed!

June 4th and the 6th found me out on the open prairie with Rev. Wichmann on a trip to Howell's Lakes. As we were driving over the barren waste to the northwest, flocks of Wilson's Phalaropes whirled over us from one side of the road to the other, and jackrabbits scampered along in unnecessary haste. All of a sudden from across the river there came a piercing scream and a powerful bird hurled itself into the air from a wall of old battlements and weather-scarred rocks. Straight at us he seemed to come with incredible swiftness. Over our heads he went like a thunderbolt and perhaps 200 meters away a poor Meadowlark was picked up by him, then a swoop upwards, another wild scream and like a meteor he vanished About half an hour later and again the air was rent with this cruel scream. It seemed to breathe the unbridled spirit of this wilderness, which has its charms after all, and which all things here appear to be inspired with. It is in the wild winds of these steppes, in the grand and jumbled rocks, in the indestructible mountain grass, in the intense colors of the flowers, in the eagle's lofty flight, in the Antelope's fleeting form, in the coyote's doleful howl, in fact in everything, but nothing expresses it better than the Prairie Falcon's riotous, unrestrained scream, the gleaming ferocity of his eye and the unerring swoop of his mighty pinions. That is the charm of this region; this spirit of freedom and liberty. How ignoble a Swainson's Hawk appeared sitting on the earth mound of a Prairiedog, and yet we know how much more useful this ignoble bird is than the Prairie Falcon, that robber-knight in feathers!

At last we reached the Howell's lakes. I walked around two lakes, three lakes, four lakes and not a bird in sight, nothing but sage and jackrabbits. Then we drove home and

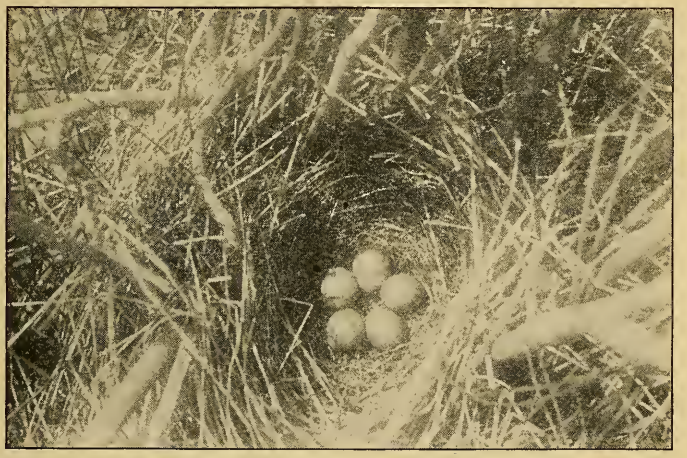
I got out to explore a little swampy tract. Wilson's Phalaropes galore and Red-winged Blackbirds with many nests. All of a sudden back of me a loud "clock." I swung around and there sat a beautiful male Yellow-headed Blackbird. I hastened to watch him and saw him disappear to the east along the big irrigation ditch. Just when I was getting ready to follow him Rev. Wichmann sang out: "A Magpie's nest" and sure enough in a cottonwood tree was the big structure with five young Magpies. What a time we had to photograph those little black and white imps and how the old ones came and protested against our actions till a well directed

"The little black and white imps."
Young Magpies.

shot caused one to come slowly to the ground mourned by some crows, who had a nest nearby with six young. And then we went after the Yellow-headed Blackbirds down the line. Two small waterpools with tules afforded us at least 30 nests with eggs and young and the usual noise. It was a great opportunity to study the life of this species and you can rest assured that I took advantage of it, altho in the terrific wind that was blowing it was quite a task to get good pictures. At last the sun went down and we returned home well satisfied with the observations of the day.

The next few days I spent in some of the smaller canyons, on the prairie and at Cheyenne on the east side of the Rockies. But on June the 12th the early morning found us out again for a longer trip to the Carrol lakes and Bamforth's lake. Along the road the same scenes as before, jackrabbits, badgers, prairiedogs, circling Phalaropes and on the telephone poles the Western Red-tailed Hawks, both old and young, absolutely fearless, watching for gophers and prairiedogs. Up on a long ridge we were driving and down in a kettlehole were two lakes and back of them, sloping down towards them as far as the eye could reach, irrigated territory. Two Shovellers went up before us, then a solitary Pintail and a pair of Blue-winged Teals. We reached the first lake and right over the landspit between the two lakes there came a beautiful long-legged bird and loud flutelike notes protested against our intrusion. He settled at the water's edge and I beheld one of the most beautiful and confiding water birds of the West, an Avocet. We marched on and beheld a destruction that was indeed sad, Killdeer's eggs, duck eggs floating everywhere in the irrigated area, the nests washed away, hundreds of Yellow-headed Blackbirds nests, many destroyed and water-soaked. Then a call by my companion, Mr. Gerhold Wichmann, "nest with ten eggs"! I hurried over to him and sure enough there was the nest of a Yellow-headed Blackbird with 4 eggs of the owner and 6 of the Cowbird. That was quite a find and I collected the whole affair, but when I tried to save them at home I found it to be an impossibility for they were all too heavily incubated. And now we began to hunt for nests systematically, selecting a certain spot as a center and going away from it in ever widening spirals. We were coming close together when up went a Wilson's Phalarope and at the same time we spied the nest with 4 eggs. What mattered it that a vicious thunder-shower had come over from the Sheep Mountains and drenched us to the skin, the glorious sun and the brisk wind would dry that again. Here was a streak of luck and the pent up anticipation at last realized had to explode in a cry of exultant joy —

Mr. Wichmann said I yelled like an Arapahoe on the warpath, but that is sheer calumny—! It took only a little time to cut away the tules, to get the camera in position and I brought away as perfect a picture as was ever taken of the nest and eggs of this bird. What a triumph! Where even an expert like Dawson had failed, I a mere novice in this region, had been successful! I was still patting myself in great conceit when another winged form came across the horizon, ah!



Ground nest and eggs of Brewer's Blackbird.
Carroll Lakes, Wyo., June 12, 1914.

my old friend from the Black Channel marshes of Sandusky, the Black Tern, and then another. Well! Prof. Knight had said that it was exceedingly rare in Wyoming as a migrant, here it was present in the breeding season, twenty of them, and a little later I found one of the eggs laid on a piece of floating but compact cowdung, a new record for the state of Wyoming. We splashed on through the watery meadows. Now a fine Cinnamon Teal attracted my attention, but here luck failed us, for I could not find the nest. Pintails and Shovellers were plentiful, but their nests were swamped. At last among the willows we found a colony of Brewer's

Blackbirds nests and here I again succeeded in getting a fine photo of a groundnest.

We returned to our wagon and on the way I observed a Long-billed Curlew, the only one I saw during my stay. Prof. Knight, in 1902, had written that they were common everywhere on the Lamarie Plains, but Prof. Reed told me that that was true only at North Park and my observations proved that he was right. But now my companions, who could beat me in mountain climbing, were too tired from marsh wading to try the large Bamforth's lake. So I went down alone to this alkali lake which was perhaps 300 meters below us. The stiff breeze was lashing the dark waves and silvery white caps rolled along the shore, but on top of these there rode buoyantly a troop of at least 150 Eared Grebes, flapping their wings or turning on their sides and flashing their shining white breasts. Leaning on my faithful gun I looked at the scene and my mind went back to the days of 1891 when in far away Germany, when still in my teens, we could record for the first time the breeding of this species in the Prussian Ober Lausitz. Where were my friends of those days? One of them has turned a Dipterist, the other ones have abandoned the study of Ornithology long ago and only one besides myself is still actively engaged in bird work. I roused myself from my reveries and then my gun spoke, once, twice, enough for all scientific purposes. At the west end of the lake were the nests, but so far out that wading to them was out of the question and as I had no boat I had to let them go. Plenty of Avocets were flying about me and in the long grass farther back I found the nest of the Western Savanna Sparrow with two eggs but when I came back with my camera I could not locate it and had to let it go. Then we drove home with troops of McCowns Longspurs and Horned Larks circling about us. In the last slanting rays of the sun the bright chest patch of a large Swainson's Hawk was glistening like burnished gold, while in the distance three badgers were setting forth on a forage expedition.

The next day we went to the 7 mile and to the 9 mile

lakes but they brought nothing of special interest. Here the Avocets were even more common than on the previous day and hundreds of Killdeers took the place of the Phalaropes. Down at the river we drove right under a large Red-tailed Hawk and in a cottonwood grove where the mosquitos would not permit us to stay, I gathered in a specimen of the Wright's Flycatcher, while a nearby tool shed harbored 450 nests of the Eave Swallows. I was getting ready for a trip to the home of the White-tailed Ptarmigan when the dispatch came that called me home. But one more trip I had to take to the mountains, on June 16th.

With the rising sun we were out and soon the same birds were met as on all the previous trips. The notes of the Poor-will and the little Rocky Mountain Screech Owl heard the evening before were encouraging signs of good luck and barely had we reached the rocky mesa and I had shot a fat young jackrabbit when we were surrounded by a number of Western Nighthawks. From the canyons on all sides came the plaintive note of Say's Phoebe, the shriek of the Arkansas Flycatcher, the splendid song of the Sage Thrasher, the cheery tones of the Brewer's and the tinkling bellnotes of the Sage Sparrow. Harder and harder became the climb until we reached the pines for a rest. Audubon's Warblers were the most common of all and, lo! there was a Tanager note. High up on the dead limbs of an old gnarled pine sat a pair of Western Tanagers. I had looked for them faithfully along the river, in town, and at all places that seemed most likely to harbor them, all in vain, and here at last, where I least expected them they were. What splendid colors in the dark green foliage of the pines as they flitted back and forth. When I had satisfied my curiosity in regard to the Tanagers, several Arctic Towhees and Gray-headed Juncos demanded attention and I was only sorry that I did not have more time at my disposal. All of a sudden a great uproar in the whole bird world and slipping noiselessly from tree to tree I at last spied the evil-doer—a fine specimen of the Black-headed Jay. I had read that he is just as bad as his eastern cousin, and if

I judged the birds testimony right he certainly is, for they made a furious protest against him, As luck favored me today, nearby I saw that well known mountain bird, the "Camp robber," the Rocky Mountain Jay, but contrary to my expectations and what I had read, they were silent and so extremely shy that they would not allow a close approach. After listening to the fine love song of a Ruby-crowned Kinglet we climbed onto the summit about 3300 metres. Just as we were stepping out of the pines "Charrr charrr" went a voice, I turned to the south edge of the trees and there sat a somber colored bird and not far away two more. First the glass was brought into action and the bird watched carefully, then the gun spoke and a fine specimen of Clarke's Nutcracker lay in my hand. There were many of them here on the barren top above timberline, but the huge snowbanks observed on my previous visit had all melted long ago. And how I grieved that I did not have my butterfly net along when seeing such species as *Papilio bairdi* and *Melitæa minuta*. Sitting on top of a huge granite boulder I looked down the precipitous wall of rock and then began to descend the 700 metres to Horse Creek to get some water. How we watched the Mountain Marmots, the Woodrats and Chipmunks, the Magpies and Ferruginous Rough-legged Hawks, the Audubon Warblers, how we searched through mountain heather and Sage brush for the Sage Grouse, all in vain, how a fierce storm caught us right on the mountain pass would take too long to tell. Down we came. When only about 200 metres away from us right at the City Springs two antelopes jumped up in plain view and stopped abruptly when I waved my kerchief at them, then bounded nimbly away. What fabulous luck! For 20 years none of these beautiful animals had been seen any closer to the city than 20 miles, and here I, a mere stranger, ran on to them only two miles from the city limits. I was in high spirits, forgotten was the long tramp of about 65 kilometres, forgotten the long laborious climb of 3500 metres, I was whistling an old cossack war song in great glee. Up went a flock of birds, another long chase and stealthy ap-

proach as the birds placed sentinels on some rocks, at last just one more shot and I held in my hand two males of the Lark Bunting, seen on my first day at Laramie and since then eluding me like a phantom.

And then the train took me East. How I rejoiced to see the first sturdy oak again and the first wheatfields, but still many a time since then I dream of the Prairiedog's bark, of the Prairie Falcon's exultant scream, of the Sage Thrasher's powerful melody, of the Avocet's flute-notes and the graceful forms of the Wilson's Phalarope, of the long undulating prairies, of the mountain crags and snowbanks, of the wild winds and fierce mountain storms, and long to set my foot again on the soil of the grand and glorious "Wild West."

ANNOTATED LIST.

1. *Colymbus nigricollis californicus*—Eared Grebe. Common and breeding at the larger alkali lakes upon the Laramie Plains. On June 12th about 500 were seen at Bamforth's lake and two taken.
2. *Larus delawarensis*—Ring-billed Gull. Not common. Seen on May 29th and June 1st on Laramie River.
3. *Hydrochelidon nigra surinamensis*—Black Tern. Common at Bamforth's lake, where breeding on June 12th in irrigated area. Formerly considered migratory and rare.
4. *Anas platyrhnchos*—Mallard. Not common summer resident mostly along the Laramie river.
5. *Nettion carolinense*—Green-winged Teal. Fairly common summer resident along streams.
6. *Querquedula discors*—Blue-winged Teal. Common summer resident all over the Laramie Plains.
7. *Querquedula cyanoptera*—Cinnamon Teal. Common summer resident all over the Laramie Plains.
8. *Spatula clypeata*—Shoveller. Common summer resident all over the Laramie Plains.
9. *Dafila acuta*—Pintail. Summer resident, but not common. Found only at Bamforth's lake.
10. *Botaurus lentiginosus*—Bittern. Not common, seen along an irrigation ditch June 6th.
11. *Ardea-herodias*—Great Blue Heron. Seen along the Laramie river. Not overly common.
12. *Porzana carolina*—Sora. Rare. Seen twice on June 1st, and on 12th at Bamforth's lake.
13. *Fuliea americana*—Coot. Rare summer resident in the im-

mediate vicinity of Laramie, but common farther out on lakes and ponds.

14. *Steganopus tricolor*—Wilson's Phalarope. Exceedingly common at all swampy places, outranking the Killdeer. Nests with one egg and four eggs June 12th at Bamforth's lake.

15. *Recurvirostra americana*—Avoset. Common summer resident about all alkali ponds and lakes.

16. *Totanus melanoleucus*—Greater Yellow-legs. May 29th one specimen at the Laramie river.

17. *Totanus flavipes*—Yellow-legs. May 29th and June 1st at the Laramie river.

18. *Actitis macularia*. Rather common along the Laramie river.

19. *Numenius longirostris*—Long-billed Curlew. No longer common on the plains; only one specimen seen on June 12th at the Carrol's lakes.

20. *Oxyechus vociferus*—Killdeer. Common summer resident at all suitable places.

21. *Podasocys montanus*—Mountain Plover. Rare. Only one specimen taken and seen May 30th.

22. *Zenaidura macroura marginella*—Western Mourning Dove. Exceedingly common summer resident. Nest with two eggs found in the Laramie Mountains one meter down in a crevice.

23. *Cathartes aura septentrionalis*—Turkey Vulture. Fairly common summer resident.

24. *Circus hudsonius*—Marsh Hawk. Fairly common summer resident.

25. *Accipiter cooperi*—Cooper's Hawk. Rather rare. One seen May 30th in the mountains.

26. *Buteo borealis calurus*—Western Red-tail. Common and exceedingly useful hawk.

27. *Buteo swainsoni*—Swainson's Hawk. Very common and useful hawk.

28. *Aquila chrysaetos*—Golden Eagle. Common resident. Seen several times.

29. *Falco mexicanus*—Prairie Falcon. Common and exceedingly destructive hawk.

30. *Falco sparverius sparverius*—Sparrow Hawk. Common everywhere. I refuse to recognize the subspecies *phalæna*. Specimens that are bleached have no right to be dubbed a subspecies.

31. *Otus asio maxwelliae*—Rocky Mountain Screech Owl. Heard and seen in Laramie June 15th, 11 p. m.

32. *Bubo virginianus pallescens*—Western Horned Owl. Two specimens in a deep canyon May 30th.

32. 1. *Speotyto cunicularia hypogæa*—Burrowing Owl. Fairly common.

33. *Ceryle alcyon*—Belted Kingfisher. Common along wooded streams.

34. *Dryobates villosus monticola*—Rocky Mountain Hairy Woodpecker. One specimen seen June 16th in the mountains.

35. *Dryobates pubescens homorus*—Batchelder's Woodpecker. May 31st in dead cottonwood tree in town.

36. *Sphyrapicus varius nuchalis*—Red-naped Sapsucker. May 30th in the mountains at 2000 metres.

37. *Melanerpes erythrocephalus*—Red-headed Woodpecker. June 11th at Cheyenne, but not seen at Laramie.

38. *Colaptes auratus luteus*—Northern Flicker. Rare in the Laramie mountains in the pines.

39. *Colaptes cafer collaris*—Red-shafted Flicker. Very common summer resident up to 3000 metres.

40. *Phalænoptilus nuttallii*—Poor-will. Heard June 5th and 15th in the outskirts of the town.

41. *Chordeiles virginianus howelli*—Howell's Night-hawk. Common summer resident everywhere.

42. *Selasphorus platycercus*—Broad-tailed Hummingbird. Common summer resident; observed only in the town.

43. *Tyrannus tyrannus*—Kingbird. Rare. Only two seen May 30th at the City Springs.

44. *Tyrannus verticalis*—Arkansas Kingbird. Fairly common summer resident up to 2500 metres.

45. *Sayornis sayus*—Say's Phœbe. Common summer resident all over the plains.

46. *Myiochanes r. richardsoni*—Western Wood Pewee. Common only in the spruces and pines up to 3000 metres.

47. *Empidonax traillii*—Traill's Flycatcher. Not common, and in town only, June 1st, 4th, 8th and 9th.

48. *Empidonax minimus*—Least Flycatcher. Not common; found along the river courses.

49. *Empidonax hammondi?*—Hammond's Flycatcher. Rare. Apparently only in town.

50. *Empidonax wrightii*—Wright's Flycatcher. Not common. A specimen taken June 13th at the Laramie river.

51. *Otocorys alpestris leucolæma*—Desert Horned Lark. The most abundant bird of Wyoming.

52. *Pica pica hudsonia*—Magpie. Common. Nest with five young June 6th on the plains.

53. *Cyanocitta stelleri annectens*—Black-headed Jay. Fairly common in the pines of the mountains.

54. *Perisoreus canadensis capitalis*—Rocky Mountain Jay. Seen only on June 16th in the mountains, where very shy and not common.

55. *Corvus brachyrhynchos*—Crow. Not common resident. Nest with six young June 6th.

56. *Nucifraga columbiana*—Clark's Nutcracker. Common in pine forests of the mountains to timberline.

57. *Dolichonyx oryzivorus*—Bobolink. Seen only at Cheyenne June 11th in the city limits.

58. *Molothrus ater*—Cowbird. This miserable pest is increasing rapidly. I destroyed many eggs and found one nest of the Yellow-headed Blackbird with four eggs of the owner and six of the cowbird on June 12th at Carrol's lakes.

59. *Xanthocephalus xanthocephalus*—Yellow-headed Blackbird. Very common summer resident, breeding all over the plains in marshy places up to 2600 metres. I found hundreds of nests with fresh and incubated eggs and young in all stages.

60. *Agelaius phœniceus*—Red-winged Blackbird. Common summer resident, but not near as much as the preceding.

61. *Sturnella neglecta*—Western Meadowlark. Abundant summer resident.

62. *Icterus bullocki*—Bullock's Oriole. Rare. A pair seen May 29th in town.

63. *Euphagus cyanocephalus*—Brewer's Blackbird. Common summer resident. Breeding in the willows along the river, smaller streams and irrigating ditches. A female shot June 4th had five spiders in its bill. Nests with four and five eggs.

64. *Quiscalus aneus*—Bronzed Grackle. Seen only at Cheyenne on June 11th, but not in Laramie.

65. *Carpodacus mexicanus frontalis*—House Finch. Common summer resident; four eggs on June 1st, five young June 18th.

66. *Astragalinus tristis pallidus*—Pale Goldfinch. Common, but in town only.

67. *Spinus pinus*—Pine Siskin. A flock in the mountains May 30th, where they certainly breed.

Passer domesticus—English Sparrow. Common.

68. *Rhynchophanes mccownii*—McCown's Longspur. This beautiful bird is common at suitable places.

69. *Poœcetes gramineus confinis*—Western Vesper Sparrow. Common at the lower elevations.

70. *Passerculus sandwichensis alaudinus*—Western Savanna Sparrow. Not common summer resident. Nest with two eggs on June 12 at Bamforth's Lake.

71. *Chondestes grammacus strigatus*—West Lark Sparrow. Not common summer resident.

72. *Zonotrichia leucophrys*—White-crowned Sparrow. Seen in

town May 29th, but whether this species or the subspecies *gambeli* could not be ascertained.

73. *Zonotrichia albicollis*—White-throated Sparrow. Seen on May 29th in town.

74. *Spizella passerina arizonæ*—Western Chipping Sparrow. Common summer resident.

75. *Spizella pallida*—Clay-colored Sparrow. Not common summer resident. Noticed in town only and its outskirts.

76. *Spizella breweri*—Brewer's Sparrow. In the greasewood bushes of the canyon and the mesa. Common.

77. *Junco phæonotus caniceps*—Gray-headed Junco. Common summer resident in the pines at 2500 to 3000 metres.

78. *Amphispiza n. nevadensis*—Sage Sparrow. Common summer resident in the sagebrush in mountains.

79. *Melospiza melodia montana*—Mountain Song Sparrow. Common summer resident.

80. *Pipilo maculatus arcticus*. Summer resident in mountains June 16th.

81. *Orcospiza chlorura*—Green-tailed Towhee. Common summer resident in mountains.

82. *Calamospiza melanocorys*—Lark Bunting. Rather rare. A pair May 29th, 31st, June 13th and a flock of fifteen on June 16th. when two males were taken.

83. *Piranga ludoviciana*—Western Tanager. Seen only in the mountains, at 3000 metres, on June 16th.

84. *Progne subis*—Purple Martin. Seen at Cheyenne only on June 11th.

85. *Petrochelidon l. lunifrons*—Cliff Swallow. Abundant. Nests by the hundreds.

86. *Hirundo erythrogastra*—Barn Swallow. Common only on the plains.

87. *Iridoprocne bicolor*—Tree Swallow. Rare. Only a few pair seen.

88. *Tachycineta thalassina lepida*—Northern Violet-green Swallow. Seen only on May 29th, but then in immense numbers along the Laramie river.

89. *Riparia riparia*—Bank Swallow. Very common breeder along creek banks and suitable places.

90. *Ampelis cedrorum*—Cedar Waxwing. Seen in the mountains, three big flocks.

91. *Vireo gilvus*—Warbling Vireo. Common, but found in the mountains only.

92. *Dendroica æstiva*—Yellow Warbler. Seen in town only, and there it was rare.

93. *Dendroica auduboni*—Audubon's Warbler. Common summer resident in the mountains.

94. *Oporonis tolmiei*—Macgillivray's Warbler. Common summer resident in dense brush on the sides of canyons.

95. *Geothlypis trichas occidentalis* — Western Yellow-throat. Found June 13th along the Laramie river.

96. *Icteria virens longicauda*—Long-tailed Chat. Rare. Found June 13th along the Laramie river.

97. *Oroscoptes montanus*—Sage Thrasher. Common summer resident in the sagebrush country.

98. *Salpinctes r. obsoletus*—Rock Wren. Common summer resident in the mountains.

99. *Sitta canadensis*—Red-breasted Nuthatch. Not common in the Laramie mountains.

100. *Parus gambeli*—Mountain Chickadee. Common in the pines in the mountains.

101. *Regulus calendula*—Ruby-crowned Kinglet. Fairly common high up in the pine region of the mountains.

102. *Myadestes townsendii*. Townsend's Solitaire. Observed May 30th at 3000 metres. Common.

103. *Planesticus migratorius propinquus*—Western Robin. Abundant summer resident.

104. *Sialia currucoides*—Mountain Bluebird. Abundant summer resident.

105. *Archibuteo ferrugineus*—Ferruginous Rough-leg. Common. Seen May 30th, June 12th and 16th.

Time spent in Laramie: May 28th to June 21st, 1914. Thoroughly explored the region which has Laramie as a center and a radius of 24 kilometers. My thanks are due Miss Rose Bird Maley, State Supt. of Public Instruction at Cheyenne, Professor W. H. Reed of the University, Rev. O. G. Wichmann and his two sons Arthur and Gerhold and Mr. Richard Eberhard the local game warden for much help in many ways.

BIRDS BY THE WAYSIDE, IN EUROPE, ASIA, AND AFRICA.

BY ALTHEA R. SHERMAN.

INTRODUCTION.

This narrative is concerned with a journey of ten months' duration, that was begun on Friday, November 7, 1913. It is not supposable that the slight inconveniences and the more grievous disappointments occasioned by the war in Europe would have been avoided had the start been made on the thirteenth of a month instead of on the seventh; but this deadly strife having interrupted travel the number thirteen appeared with a frequency sufficient to gladden the hearts of the most superstitious. Though I was thirteen minutes too late to secure berth No. 13 in cabin No. 13, yet a place was found in the cabin next to it on a steamer that sailed from Copenhagen on August 13th at the thirteenth hour of that day. Our good ship, escaping the mines, together with the ordinary dangers of a sea voyage, that lasted thirteen days, brought us in safety to the blessed shores of Hoboken on August 26th, and the trunk I was forced to leave in London came safely at the end of two months and thirteen days at a cost of $13.03 only for shipment.

Barring a large curtailment of the journey near its close, its accomplishment in the main was according to original plans without any very serious inconveniences, with nothing lost of greater value than a lead pencil or a hair-pin, and with nothing stolen. My suitcase, locked but once on the entire journey, passed through hundreds of hands; it either contained nothing that aroused cupidity, or the honesty of those to whom it was intrusted is worthy of mention. That one for six months can without accident or delay move forward according to a previously scheduled plan, that has fixed where he shall lie down, and where he shall rise up, where he shall eat, drink, and be held up for tips, must be due to the faithful performance of duty by many humble workers on boats, and railway trains, and all along the avenues of travel.

A conflict of nations, that cut down many a poor lad in his teens, prevented my trip reaching its majority, and I

Copyrighted by Althea R. Sherman, 1915.

was obliged to turn back, when on the eve of visiting my twenty-first country. The distance actually accomplished was upward of thirty-three thousand miles; the routes passed over were for the most part along the well-beaten paths of travel. To general sight-seeing was added the noting of as many birds by the way as possible. This often meant rising in the morning while others slept, and writing notes in the evening, when they were again asleep.

To identify the birds seen was a difficult task for one without suitable "Handbooks" for some of the countries. As much preparation as very limited time permitted was made in advance. For the birds of India help was had from the books of Eugene Oates, W. F. Blanford, T. C. Jerdon, Douglas Dewar, and Andrew L. Adams, besides the small volume of Frank Finn, entitled "The Birds of Calcutta," and a similar book by "E. H. A." bearing the title of "The Common Birds of Bombay." For identifying the birds of Egypt there were used the descriptions of G. E. Shelley, and those of Charles Whymper.

Less fortunate was the work of identification in southern Europe, where I was unable to secure handbooks. Occasionally the name of a bird was given me by a fellow-traveler, and natural history museums, when available, gave much assistance. In order to make the museums of use as full descriptions of the birds as possible were written down at the time of observation; and at times the text was greatly assisted by hasty drawings. The names for many of the species were unknown for months, while those for others are still unsolved problems; one, seen at my most southern stage in Egypt, — the Second Cataract, — was named for me in the most northern museum visited, that of Bergen in Norway; and the clue to the identity of a bird seen at Mount Abu in India was given by a specimen found in the museum of Stockholm. Species with names unknown were numbered, and references to them in the daily notes were made by means of these numbers, though the identity of a few of the species was correctly guessed; others were given temporary names, and my "Jerusalem Chickadee," "Constantinople Crow," and "Interlaken Beauty" serve to awaken quite as

pleasant recollections as do their more prosaic names, learned later. One wonders if it was permitted Eve to name the birds; if so, what rare sport she had!

For book knowledge of the birds seen in northern Europe indebtedness is due to the works of numerous writers, among whom special mention is made of James Backhouse, Bentley Beetham, J. Lewis Bonhote, John A. Bucknill, William Eagle Clarke, Charles Dixon, Heinrich Gätke, James Edmund Harting, John Lea, R. B. Lodge, R. Kearton, Percy R. Lowe, H. B. Macpherson, Robert Mudie, Alfred Newton, W. P. Pycraft, Howard Saunders, R. Selous, A. L. Thompson, N. F. Ticehurst, and William Yarnell.

To speak of the commonest birds by their common names would appear to be a simple undertaking, yet in doing it there are pitfalls for the stranger, which may not always be escaped, and many more beset one's course in the use of scientific names due to lack of uniformity in the various books. Perhaps the most reliable, up-to-date guide in nomenclature is the recent publication, "A Hand-List of British Birds," by the four writers, Messrs. Hartert, Jourdain, Ticehurst, and Witherby. It employs trinomials for subspecies, and includes numerous birds from the British Isles that differ sufficiently from their congeners on the continent of Europe to entitle them to recognition as subspecies. The modifier "British" very properly belongs to them, but the innovation that saddles "Continental" on their very near relation found on the Continent seems to be one scarcely acceptable to the ornithologists of other European countries. The skilled field student may be able to recognize some of these fine distinctions, but it would be the height of folly for the wayside wanderer to pretend to anything of the sort.

The shelves of our libraries groan beneath the weight of the many volumes of books, that treat of the history, custom, art, natural products, commerce, and other interesting topics concerning the countries I visited. Yet from none of the books of travel that I have read does the prospective tourist gain an adequate idea of what species of birds he is likely to see. In fact most of these books are singularly silent on the subject of birds. Books abound that treat of the avifauna of

each of these countries These technical works tell us which are the common birds, but much time is required to sift out these species. The need of the traveler, who must read as he runs, has been well met in those books descriptive of the birds of Bombay and Calcutta, that have been mentioned above.

If there is call for an apology because of this writing, but one can be offered: It is believed that no one heretofore has published an account of the bird life he saw beside his pathway while pursuing a journey that took him over many of the most popular routes chosen by the average tourist. If the observations of others tally in any respect with mine the recital of them for the most part will be marked by a negative character: by the failure to have seen very many species of birds about which we have learned in song and story. For the first six months in foreign lands, until London was reached, a scheduled itinerary made out by Thomas Cook and Son was followed by me. After that the viewing of birds entered into the plans: stops for a few days on their account were made now and then; and the famous colonies of breeding sea birds on the Farne Islands, and on the Orkneys and Shetland Isles, were visited. With the exception of a few wonderful sights such as these islands afforded this narrative will be concerned with the common species of avian life. Certainly no one can reasonably expect to see other than common birds on such a trip, and but a small percentage of those.

It is with the study of our common birds at home that most of us are employed. In my own case I count twenty years all too short for a thorough acquaintance with the birds of my own dooryard, where thirty-one species have been pleased to nest. Some impression made by the common birds of other lands, some comparisons between them and those of our country, some notes regarding their scarcity in some places and their abundance in others is the most that can be attempted. The title, "Birds by the Wayside," has been chosen for these chapters, but this does not mean that a desire to speak of other things will always be curbed, and those who care to hear only about birds are hereby given due notice.

INDIA IN JANUARY.

The voyage from New York to Bombay consumed an entire month. This length of time was due to stops of one day each at Madeira, Gibraltar, Algiers, Monaco, and Cairo, and two days at Naples. A few birds were seen at each of the places, and from the Suez Canal, overlooking Lake Menzaleh, was witnessed one of the most wonderful displays of bird life seen on the entire trip, but this was in Egypt, and the account of it belongs to the story of that country.

India was crossed twice by rail; the first crossing was made on the special mail train from Bombay to Calcutta through Jubbulpore in one unbroken journey, the second was through Benares, Lucknow, Cawnpore, Agra, Delhi, Jaipur, and Mount Abu, with stops at each of these places. The two routes are separated in places by several hundred miles. Some species of birds, that were quite numerous in one region were not observed in others. This is true of the Black Drongo (*Dicrurus ater*), one of the birds most frequently seen on the southern route, it failed to be seen at any time in the most northerly part of the trip: that about Agra, Delhi, and Jaipur, but it appeared again farther south about Mount Abu and Bombay.

The Black Drongo, nicknamed the King Crow, has black plumage and a long forked tail. Binoculars reveal to us that the iris of its eye is red, giving it a rather wicked appearance. After the manner of many other flycatchers it perches conspicuously on telegraph wires and fence-posts. In temper it resembles our Kingbird, which accounts for the "King" part of its sobriquet, and the books tell us that it is a valient fighter of the Crows; also that its methods of catching insects and building its nest are such as we observe in our Kingbird. Of the several cousins of this bird only the White-bellied Drongo (*Dicrurus cærulescens*) was seen. He is a striking fellow in appearance with the keen contrasts of his colors.

Another bird frequently seen along this first route was the Indian Roller (*Coracias indica*). This species, partial to both fence-posts and telegraph-wires, seems to favor the

former. When perched it is a beautiful sight, but on the wing it is a dream of loveliness as its greenish blue colors, mingled with various other shades of blue, gleam in the sunlight. Its brilliant coloring, together with its large size, a trifle more than twelve inches in length, makes it a conspicuous sight, which is noted by all travelers, no matter how blind they are to other birds. Since it hunts for its insect food very much as do our Shrikes there is frequent display of its enchanting colors. Although sacred to the god Siva, this distinction has not saved it from the toils of the plumage hunters, and it is far less numerous than so useful and beautiful a creature ought to be. It was my experience to note the species quite often in some portions of the southern journey, and in diminishing numbers as far as Delhi, after which none was seen. It is interesting to recall that Mr. Finn has written that he thinks this species can be acclimatized in America. It certainly is a pity that the experiment was not tried upon some such bird instead of the hateful English Sparrow.

The Indian Roller is frequently called a Blue Jay; anent this slip Mr. Douglas Dewar has this to say: "He is not a jay at all; but the misnomer is perhaps a pardonable one, for in more respects than one the bird resembles the true jays, and I am told that the European roller (*Coracias garrula*), a near relative of the Indian blue jay, is known in parts of Germany as the Birch Jay. American visitors to India, however, make no such mistake. You never hear one of them call the roller a jay. They dub him the Surprise Bird, a name which admirably suits both him and the paddy bird." — To this gratuitous modicum of praise all Americans should doff the hat. That one Briton has seen fit to acknowledge that in one instance Americans can do the right thing in the right place is worthy of more than passing notice. It was a matter of great surprise to me that during six weeks of reading India's newspapers never except once did I find them containing anything but sneers, lies, and misrepresentations, when making mention of Americans or things American;

and later I found a similar spirit animating the English press. It offered a problem that defied analysis until the thought suggested itself, that here were examples of that so-called "industrial rivalry" or "commercial jealousy" of which we hear so much. That these were unsuccessful efforts of the British to rival similar sneers, lies, and misrepresentations "made in Germany." It was a hopeless competition, yet it rendered none the less amusing the scramble, after August 5, 1914, of the English and Germans for our good will and good opinion.

Along the railway route through Jubbulpore (and occasionally in other parts of India), two species of birds, both small and green of plumage, were quite numerous. These were the Common Indian Bee-eater (*Merops viridis*) and the Crimson-breasted Barbet (*Xantholæma hæmatocephala*). A large flock of the Barbet was seen daily near my hotel in Delhi, and they were quite plentiful on Mount Abu. They are rather droll, clumsy-looking, little fellows, as one would expect to be true of a species closely related to the woodpeckers. Their predominant color is green with sulphur-yellow trimmings about the head, and with patches of crimson on the forehead and throat. Unfortunately for the tourists these birds are silent during cool weather, and we did not hear their peculiar metallic notes that have earned for them the nickname of Coppersmith.

In spite of the brilliant green coloring of the Common Indian Bee-eater its gentle mien and flycatching habits constantly remind one of the Phœbe, and the impression is deepened, when we find three or four of them sitting closely together on a branch in the exact fashion of a brood of young Phœbes. The books say that this fondness for each other's society leads them in some places to roost in large companies; also that they nest in burrows that they dig for themselves in the banks of the rivers and ravines. Although their size and colors are similar, yet their slender forms and long central tail-feathers readily distinguish them from the short-tailed chunky Barbets.

A rough delineation of the country traversed shows that for a few hours out from Bombay the railroad runs through a rather barren country with high, irregular hills — the Western Ghats — rising on either side, then the valley widens, more of the cultivated fields appear with trees in rows or in scattering groups. Herds of the Indian buffalo cattle and flocks of goats are fairly plentiful. On the second day we passed through a sterile region in the neighborhoods of Sutna, Jaitwar, and Markundi, and a still worse strip east of Manikpur; its chief crop — that of stones — seemed to be unfailing and was harvested in long, narrow piles, which were nicely leveled off on top. In other places the face of the country was fresh and green with young crops, with here and there a field blue with blossoming flax. It seemed reasonable to suppose that an old country, densely populated, and devoted largely to agricultural pursuits, would look old, and that the thronging millions that cultivated the fields would be much in evidence. Instead, in many places the country looked as new and untrod as did portions of Dakota and Montana twenty years ago, and the people when seen appeared to be in a homeless wilderness until the eye detected here and there miserable villages, composed of mud huts of the same color as the ground from which the mud was taken; these hovels were low, without visible windows, and with roofs of straw or rushes. The houses of a better class were covered with tiles.

The railway journey to Calcutta occupied forty-four hours and terminated in the gray dawn of a January day. It was in this city that the more leisurely observation of the birds began. Among the first birds noted were two representatives of a species not met with afterward, though it is said to be a common species in winter throughout the region of the plains. It was a brown bird that perched on dead twigs and flicked its tail like a Phœbe, being about the size of that bird, but the shape of its head was shrike-like, as were its motions when it darted to the ground for insects, therefore it was with genuine satisfaction I found that afternoon in

the Indian Museum a mounted specimen of the species labeled Indian Brown Shrike (*Lanius cristatus*); and near it another specimen of a female Indian Koel (*Eudynamys honorata*), which settled for me the identity of a large speckled bird that was watched for a long time that morning. It belongs to the Cuckoo family, and arouses interest, because true to the traits of its tribe, it lays its eggs in the nests of other birds.

Besides many interesting glimpses of the industrial life and customs of the natives, a visit to the banks of the Hooghly River afforded an introduction to the Brahminy Kite (*Haliaster indus*). Several of these handsome birds were flying over the river; others perched in the rigging of ships were pruning themselves. This is another species that shows great beauty of coloring when on the wing, the bright, clear, chestnut-rufous, or maroon color of its upper plumage, contrasting finely with the under parts, which are white, narrowly streaked with brown: its head and neck are white also. This scavenger of the surface of the river was frequently seen to the westward as far as Benares, gracing now and then the top of a fence-post by the wayside, from which it watched for frogs and crabs, and other favored tidbit.

Calcutta was the only place in which the Common Indian Swift (*Cypselus affinis*) was identified. Numbers of them were noisily flying above my hotel; both their notes and their appearance in flight were suggestive of our Chimney Swifts. They are said to build their mud nests against the beams and rafters of houses and of porches, and return to these nests for roosting. This trustfulness in mankind makes the species one of the many in India that could be brought under very close observation.

Of three species that were seen in great abundance almost everywhere it is difficult to say which were found most plentiful. All were more numerous in the cities than in the country. The Indian House Crow (*Corvus splendens*) was not seen on Mount Abu, and the Common Pariah Kites (*Milvus govinda*) were not numerous there. The Common Myna

(*Acridotheres tristis*) was not seen in Bombay, although it is said to be a resident. Without appearing to exaggerate it is not easy to give an adequate idea of the very great abundance of these species. Nineteen Indian House Crows standing on a plot of ground no more than ten feet square in a Calcutta park were thought exceedingly plentiful, but afterward they were seen in greater numbers. Looking up a narrow street the air above it seemed full of the Common Kites, one hundred or more of them being in sight; and of the Common Mynas, flocks of twenty or thirty appeared ready to fly up from one's path almost everywhere.

Especially well named is the Indian House Crow, a bird that belongs to the crow family, found in India most abundantly in the neighborhood of houses. It is comparatively fearless, and in its search for scraps of food will walk with the boldness of a very tame chicken among a group of natives who are eating. Neither is it averse to coming to porch floors or perching under porch roofs. Those who are intimately acquainted with this Crow tell us that it will enter houses and eat food from the table, "for there is no right to which the Crows cling more tenaciously than the right to be fed by the man whose compound they clean." "Black as a crow" is not applicable to this species, since gray is the predominating color, although the head and nape are black. It is a very noisy bird, and all day long one's ears are filled with its tiresome cawing; how tiresome these sounds are is realized when one is out of ear-shot of them. The failure to hear them on Mount Abu was one thing that caused that place to be so attractive. Their place was filled in a very slight measure by their cousin, the Jungle Crow, or Indian Corby (*Corvus macrorhynchus*).

The Common Kite, less bold than the House Crow in its approaches to man, is by no means a timid bird. A lady in Delhi in relating to me her experiences with this species, said that once when eating out of doors a Kite came so silently and so deftly snatched food from her hand that she was not aware of her loss until the bird had flown some distance from

her. On another occasion a Kite tried to snatch from her hand a paper bag containing food. Having read similar stories I was led to inquire of my guides and other people if these were common experiences, and learned that they were, except that often the Kite left a painful scratch.

A pair of Kites was watched while building their nest in a neem tree that stood in the hotel yard in Jaipur. The work proceeded very slowly. The twigs were carried sometimes in the bill, sometimes by a claw; once the bird took up the twig by its bill, then shifted it to a foot. Bill and claw were used about equally in the carrying. It was at Delhi that Kites were observed when going to roost in the top of a peepul tree. They perched among the topmost limbs on the highest twigs, and when the coming and going ceased, there remained for the night thirty-seven of these birds. The Kite equals, if it does not surpass, our Red-tailed Hawk in length; in weight it must be very light for such small boughs to support so many of them.

The Common Myna resembles in size and build the Starling, but has the street habits of the English Sparrow, yet in some of its country habits it is like the Starling, especially in its fondness for the neighborhood of cattle and for perching on their backs. It has a fine appearance, produced by plumage that is black on head, neck and throat, and iridescent vinaceous on breast and belly. When in flight it is easily recognized by the white patches on the wings, and the white in the tail. These spots of white serve to distinguish it from its cousin the Bank Myna (*Acridotheres ginginianus*) on which the wing patches are pinkish buff, as is also the tip of the tail. In the latter species the skin around the eye is brick-red, while in the Common Myna it is yellow. The Black-headed Myna (*Temenuchus pagodarum*) is known as the Brahminy Myna because of its elegant appearance and the distinguished air imparted by its long black crest, and the elongated feathers of its neck, throat, and breast, which in color resemble the breast of our female Robin. This species was seen several times in a free state, also frequently in cap-

tivity along with its cousin, the Grey-headed Myna (*Sturnia malabarica*).

The avian sights viewed from the car windows, that were of a thrilling nature, were confined to those portions of the journey that were between Bombay and Calcutta, and to that which lies eastward of Benares. Westward of that place the plains soon became drier, then drought-stricken, and with increasing aridity the number of birds decreased. East of Benares the level green fields were in all directions very much alike. There was no lack of water, but rather an excess of it. From the many ponds by the track-side were startled huge birds: Vultures, Storks, and Herons, sometimes singly, again in flocks. Often the train rushed past stupid looking birds of a smaller species, standing in the wayside pools. These gray, obscure appearing creatures frequently took flight, whereupon from the gray unobtrusive forms there arose visions of white loveliness, that floated off a short distance, then suddenly sank into the earth — apparently — for the birds had alighted and were a dull, concealing gray once more. Here, in truth were the "Surprise Birds"! for these were Pond Herons, sometimes called Paddy-birds (*Ardeola grayi*).

Since all my stops, except one, were to be within cities, small hope of seeing birds there was entertained, but in this respect there was to be a pleasant surprise. The native quarters in the cities were as one would expect to find them, compact, crowded and dirty, but the European portions in which the hotels were located were like our ideal suburban villages, each house having spacious grounds about it; these are not called yards in India, but compounds. Their trees and flowers, together with the irrigation necessary for the latter, attracted many birds. The patronage of these hotels was almost entirely that of tourists, a large proportion of whom were Americans. From them there was much growling because the dinner hour never began until eight o'clock in the evening, and breakfast was not ready until nine o'clock in the morning. But in the latter arrangement there was compen-

sation for the bird student. By rising at the first peep of dawn it was possible to secure two hours for the observation of birds before breakfast time. Yet this boon was not without its drawbacks, in the hotels that were lighted by kerosene. When I found that my rooms on the ground floor had a back door so badly warped that two cobras abreast could enter at any time, and that there were no matches with which to light the kerosene lamp, I had fears that my first steps in the morning might fall on a cobra. To be sure it was winter, a season when these snakes are not much abroad. We are not accustomed to think of snakes as city dwellers, but the deadly cobra is quite urban in its tastes, seeking for its dwelling-place a hole in the mud walls of the natives' huts; cactus hedges also are favored resorts. Not only cobras but other venomous snakes are sometimes found on bedroom floors, in schoolrooms, and in other human resorts, as we may learn from several writers.

One of the species of birds frequently seen near the hotels was the Indian Hoopoe (*Upupa indica*). Both the manner of its flight and the barred portion of its plumage were strong reminders of the Woodpeckers. Immediately upon alighting its bright-colored crest is erected, and the same thing happens when the bird is frightened. At other times the crest lies flat, the end of it projecting beyond the head affords in outline a symmetrical balance to the long bill, making the head resemble a double-pointed pick-ax. This semblance is especially marked when the bird is digging for its living in the earth. The sight of my first Hoopoe was a long anticipated event, and was of unusual significance from the fact that it was the first foreign bird in a free state to be met of which I had retained a mental picture from my early childhood, or more correctly speaking, it was a mental picture of a picture, one found in the second book I owned. It was a book then, a wonderful book, though now it would be called a tiny brochure of twenty-four pages. Its title is "A History of Birds for Children." Its illustrated cover is wonderful; still more so is its wood-cut illustration of the Hoopoe, for it proves

the theory of evolution. This illustration shows that fifty-five or more years ago the Hoopoe was a thick-set, thick-billed bird, resembling a Grosbeak, with a gently curving crest becoming to the form and disposition of a Bluebird. In the course of ten or twelve years the structure of the species had undergone considerable change, which can be proved by the picture of it that is to be found in Webster's Unabridged Dictionary, edition of 1870. And now in January, 1914, I find from the living birds seen in India that in a structural sense vastly greater changes have taken place within the last forty-five years. The bird at present, with its short legs, long, sharp bill, and barred wings, looks somewhat like a woodpecker. In fact, some of the tourists insisted that it was a woodpecker.

One Golden-backed Woodpecker (*Brachypternus aurantius*) was the sole representative of the Picus family seen in India. With the usual cheerful spirit that characterizes the family the world over it searched tree trunks and inspected the hood of an electric lamp on one of the principal streets of Delhi.

Other species of birds found by me near the hotels more often than elsewhere were the Bulbuls, the Babblers, Indian Tree-pie, Common Indian Starling, Magpie Robin, Brown-backed Indian Robin, Indian Redstart, Indian Tailor-bird, Flycatchers, Warblers, and Purple Honeysucker. Some ornithologists prefer to call the last mentioned species the Purple Sunbird (*Arachnechthra asiatica*). By its quick movements among the flowers while seeking its food of insects and nectar, as well as by its size and color, it brought to mind the Hummingbirds. Especially is this true of the male Sunbird, that is of a rich, iridescent violet-blue color, while the female as described is greenish brown-gray above, and greenish yellow beneath. Both sexes were seen, but the male more frequently.

The Red-whiskered Bulbul was seen and positively identified a short distance from the entrance to the Caves of Elephanta; on a few other occasions identification was not so

certain. The Common Bulbul was found in several places, but nowhere so plentiful as on Mount Abu, where it appeared to be the most abundant species, even outnumbering the Common Myna. These two species were the only Bulbuls of which I made sure, although India boasts of fifty other species of them; and of Babblers there are eighty-three, of which I saw but two, the Common or Striated Babble (*Argya caudata*), and the Jungle Babble (*Crateropus canorus*). The last named species, very inconspicuous in its ashy brown plumage, with its ground-haunting proclivities, would not be so easy of identification as one might suppose, if it were not for its habit of flocking in small parties of five, six or seven birds which affords a clue to their identity, confirmation of which may be had from almost any guide, since these birds are commonly known to the natives by the very appropriate name of the Seven Sisters, or the Seven Brothers.

The Indian Tree-pie (*Dendrocitta rufa*), a bird eighteen inches in length, is certain to arrest one's attention by its pleasing display of colors and its long tail. Its metallic whistle is fully as musical as the call notes of the Bronzed Grackle, nor has it a better reputation, since it is well-known as a destroyer of both birds and their eggs.

One of the pleasures that may be experienced by the winter traveler in India is a wayside acquaintance with the Indian Tailor-bird (*Orthotomus sutorius*), though it is not the season to see the bird engaged in its sartorial tasks. All that one sees is a little wren-like bird with a rufous crown and yellowish olive-green upper plumage; that cocks its tail while running about in search of food. Jerdon and several other writers tell us with considerable detail of the manner in which the Tailor-bird begins its nest by drawing together two leaves or the edges of a single leaf, pierces with its bill holes along the edges, then sews the edges together, using for this purpose a thread it has picked up, or one it has spun for itself, or strands from a spider web; that after thrusting the thread through a hole in a leaf it ties a knot, which prevents the thread from slipping through the hole. This is but one more

example of carelessness in observation that has led to erroneous theories which have been handed down by one writer to another. It remained for Mr. G. A. Pinto to actually watch a Tailor-bird, while building her nest, and to note down what he saw. These observations have been published in Mr. Douglas Dewar's book, "Birds of the Plains," and show what the bird really does: That through the punctures she makes in the leaf she pushes cobwebs, threads, and later on the cotton of the nest lining, which form knobs on the outside of the leaf, and to conclude in the words of the author of this book: "As a matter of fact the bird makes no knots; she merely forces a portion of the cotton strand through a puncture, and the silicon which enters into the composition of the leaf catches the soft, minute strands of the cotton and prevents them from slipping."

Three species belonging to the Turdidæ family were seen in numerous places. These were the Indian Redstart (*Ruticilla rufiventris*), Brown-backed Indian Robin (*Thamnobia cambaiensis*), and Magpie Robin (*Copysychus saularis*). All are small birds, the last mentioned, eight inches in length, being the largest. In each species the plumage of the female differs somewhat from that of the male. The very effective arrangements of the black and white colors of the Magpie Robin make a beauty of this dapper fellow. He ranks very high as a singer, and is known to the natives by the name of Dhyal. The close resemblance of the Common Starling of India (*Sturnus menzbieri*) to its European cousin serves to identify it at once.

One of the very few species of birds that I saw in each of the grand divisions, Europe, Asia, and Africa, was the White Wagtail (*Motacilla alba*). Aside from the House Sparrow it was the species most widely and frequently met. It was seen in its winter refuge in India and Egypt, and in its summer home in the countries of Scandinavia. In the vicinity of Mount Abu two other members of the Motacillidæ family were seen. These were the Grey Wagtail, and its very hand-

some relative the Large Pied Wagtail, — the *Motacilla maderaspatensis* of several authors.

The Rose-ringed Parrakeet (*Palæornis torquatus*) was the species of Parrot seen in India. The life it leads seemed a merry one, judging from the noisy parties of screaming birds, that flew so frequently overhead, especially toward roosting time. They were not always seen on the wing, but often were climbing about in the trees and cactus hedges, or sometimes were sitting on a branch eating some kind of fruit, that was as red as their beaks. Another native species of India did not require a handbook to assist in its identification; this was the Peacock of which only one wild bird was seen; the others appeared in a state of semi-domestication, but not so tame as they become with us. The mention of this bird in its native haunts calls to mind the stories of the famous Peacock Throne, that formerly stood in the imperial palace of Delhi, but together with other booty of war was carried off to Persia nearly two hundred years ago. The guide-book of G. A. Natesan contains the following description of this throne: "It owes its name to the two hybrid birds of a species quite unknown to the ornithologist, perched on the pinnacles. They bore a faint resemblance to peacocks, whence followed the adoption of the peacock as a badge of Indian Empire. The expanded tails, thickly studded with sapphire, rubies, emeralds, etc., inlaid so as to represent the exact colours of the living birds, formed the back of the throne. Between the peacocks was a parrot, as large as life, carved out of a single emerald. This throne is (or rather was, for experts declare that very little of the ancient throne remains), no doubt, of immense value, the lowest estimate being two million sterling. In shape it resembles rather a state bed than a throne. It is made entirely of gold — steps, sides, and legs — and is artistically chased and encrusted with countless precious stones."

Although this wonderful example of the goldsmith's art has been lost to Delhi, there still remains the superb structure in which it stood. Upon its wall are inscribed these lines:

"If there be a paradise on earth,
It is this, it is this, it is this" —

Words cannot depict, nor pictures suggest the simple grandeur of this Diwan-i-Khas, or Hall of Private Audience; but the following description by another is among the most successful attempt: "The whole is all white marble, asheen in the sun, but that is the least part of the wonder. Walls and ceilings, pillars, and many pointed arches are all inlaid with richest, yet most delicate, colour; gold cornices and scrolls and lattices from traceries of mauve and pale green and soft azure. What must it have been, you ask yourself, when the Peacock Throne blazed with emeralds and sapphires, rubies and diamonds, from the now empty pedestal, and the plates of burnished silver reflected all its glories from the roof."

Not far away is the Diwan-i-Am or Hall of Public Audience, built of red stone, except that white marble is used in front of the throne recess. The juxtaposition of the two kinds of stone produces a very poor effect, which is enhanced by the patchwork impression wade by the arrangements of the mosaic panels on the rear wall. There are about three hundred and fifty of these mosaic pictures, large and small, representing birds, flowers, fruit, and animals, more than half of them portraying birds. A closer view shows them worthy the attention of bird students. Not only is there spirited and realistic action expressed in the drawing of the birds, but the color is often most excellent; especially is this true of four pictures of Hoopoes. Sometimes the birds are perched, others are on the wing. When it is remembered that these are made of stone, that at times one piece of stone represents the feathers of a tail or of a wing the accomplishment seems remarkable.

India's monuments are far-famed and a lure for many visitors. Thrice fortunate are we whose favorite studies have been history, art, and ornithology, for that country affords rich fields of study in all of these. If there had been no other

wonderful sight except the Taj Mahal its justly great repute was sufficient to have induced me to make the journey half way round the world to see it. Easily we remember Sir Walter Scott's injunction about viewing Melrose Abbey aright, but even more appropriate is this warning for the seeing of the Taj Mahal. I shall always be grateful to the lady who added the advice that the first visit to this "dream in marble" should be made by moonlight. The fates were propitious for the fulfillment of this suggestion. There was a full moon the evening my train from Cawnpore, about an hour late, arrived in Agra sometime after ten o'clock. In pursuing my itinerary under the direction of Thos. Cook and Son I was always met at each railway station, that I stopped, by a man sent from the hotel where I was to stay, otherwise I might not have ventured to ask that the driver take me to the Taj before going to the hotel.

It was a memorable ride: the first portion was made under the shadows of the massive and frowning, though impressively attractive, walls of Fort Agra; then for some distance the road lay amid surroundings that looked in the moonlight like the suburbs of a flourishing American town, whose houses are placed in spacious grounds. This impression does not hold by daylight, but the Taj is isolated from other buildings by a considerable distance. At the entrance gate the driver left me to spend an hour or more within the garden that lies before the Taj. It may be sufficient to say that the "poem in stone" was all that fancy ever painted it; or in the words of another — "To describe it would be impossible, and as I saw the Taj that night not a detail, not a single feature impressed itself upon me, but instead the whole, the shape of something infinitely beautiful floats before me just as it did then, and it would not be sacrilegious to say, 'twas a vision such as man may never hope to see until his spirit gazes on the celestial temples through the beautiful gates ajar."

There were other visitors in the garden; the seats on the raised platform near the center were filled with groups of

people, but no chattering tongues were there, not a word fell from the lips of any one. The only sound heard was the silvery tinkling of the little fountains beside the paths. An artificial light gleamed from the doorway; a mere point of light did the illumined doorway appear when compared with the entire structure. It seemed to beckon me like a will-o'-the-wisp, and responding to the beckoning I advanced, then withdrew; at last I approached the very doorstep, but dared not break the spell of the night by entering.

Considerable time was given at one period of my life to the subject of Saracenic art and ornamentation, therefore I longed to linger over each of the remarkable examples that I met. Notwithstanding the great beauty of the interior decorations of the Taj I deem them surpassed by some of the mosaics to be found in the so-called "Jasamine Tower," a portion of the harem of Shah Jehan's palace in Fort Agra. In the same inclosure is the Pearl Mosque, truly a pearl among mosques, renowned for its exquisite proportions, for the simplicity and peerless beauty of its design. Among these gems of the architect's art one is tempted to linger, and to note among other things that the artists of Shah Jehan's time were allowed to depart from the rigid laws of Saracenic art that forbade any likeness of living things in their decorations; also that the mosaics that ornament the tomb of Akbar at Sikandra, conforming strictly to the canons of that art, consist of geometric patterns, but are far less pleasing than many of the purely Saracenic mosaic designs that may be found elsewhere. A queer structure is this tomb of Akbar, and similar tombs of several kings at Lucknow. From a distance such an edifice, large enough for a palace, would be taken in America to be a casino or a summer hotel.

Temptation comes to continue this digression: to speak of visits to the deserted cities of Amber and Fatehpur Sikri; of some of the sights of Benares, such as the Golden Temple, the Monkey Temple, and the Cow Temple, which is the home of sixty sacred cows: paved with tiles and gayly ornamented, it probably is the finest cow-stable in the world. But for the

naturalist a visit to the temple of Galta Pass (written also Gulta Pass) must prove the most interesting. There the monkey is worshiped and fed. The chief species seen there is a long-tailed, black-faced sort, — the Langur Monkey (*Semnopithecus entellus*) if I mistake not. The surrounding hills are said to be full of them, their number being estimated at a thousand or more. The hour of my visit was late in the forenoon, and many pious Hindus had preceded me, so the monkeys were not hungry, yet a little calling soon brought from twenty to thirty of them trooping over the hills. The party consisted of an old male and his harem of ten or twelve females, each female carrying a youngster of a few months, and followed by about an equal number of half-grown young ones. A bag of parched millet had been taken along for feeding them. For me it was a unique experience to be surrounded by these animals, to have one mother monkey after another seize my hand with one of her hands, while with her other hand she quickly picked up the grain and stuffed it into her mouth. All were soon satisfied, and the mothers sat down closely about me and nursed their babies. The half-grown fellows kept by themselves. Both they and the babies at times indulged in play, wrestling, pulling each other's tails, and playing "leap-frog." Here was a place for the student of animal behavior to pitch his camp.

In both country and city, on the ground, on the housetops, and in the trees, almost everywhere near human habitation was to be seen the little, striped, gray Palm Squirrel (*Sciurus palmarum*). These squirrels, two or three species of monkeys, and occasionally a mongoose were the principal wild mammal seen. A nodding acquaintance was scraped with a few species of trees. One cannot give attention to birds without wishing to learn the names of the strange trees in which they were found. Those I now recall were chiefly the peepul, neem, tamarind, sal, and banyan, with here and there a palm.

Most travelers go to Mount Abu to see the Dilwara marble temples, which certainly do repay the trouble of a long

journey. Dating from the eleventh century these Jain temples are said to be unsurpassed for the delicacy and beauty of their carvings. This statement is easily creditable for there seems to be scarcely a square foot of the marble surface that is not most elaborately carved. Birds, beasts, fruit, flowers, and human figures are the decorative units in a great variety of design; each pillar and ceiling differing in design from its neighbors. This mountain has been a sacred place for ages, and mention of it is made by Pliny, and other ancient writers.

The village of Mount Abu, having a population of about five thousand, is situated at an elevation of nearly a mile above sea level, and contains the country home of several Maharajahs and other potentates. This restful spot is in delightful contrast with the places of the plains: the bracing air is not ladened with the odor of burning manure, used by the natives for fuel; the screaming of Kites and cawing of Crows are not incessantly in one's ears; and there does not appear such abject poverty and squalor. The birds both in numbers of individuals and of species exceeded those seen elsewhere. Many of the Flycatchers and Warblers were seen in no other place. There were about twenty of these species for which I never found the names. A few of them were of brilliant plumage. A bird that held my attention because of its sprightly behavior was the White-spotted Fantail Flycatcher (*Rhipidura pectoralis*), another attracting the eye by its fine color and dashing appearance was the Southern Yellow Tit (*Machlolophus haplonotus*). On the road up to the village the Indian Grey Titmouse (*Parus atriceps*) was seen, and in several places the Indian Grey Shrike (*Lanius lahtora*) was passed. Near the village is a small lake where birds were abundant. Two visits were made to it, and on both occasions a pair of Red-wattled Lapwings (*Scarcogrammus indicus*) was seen close at hand, and at a greater distance were shore-birds, ducks, birds of the Cormorant family, which probably were Shags, and Coots. It always did

seem good to see a Coot, a bird that was precisely the same as those we have at home.

I had paid in advance for four rickshaw rides, but it suited my purpose better to go afoot and alone in the neighborhood of the village, and to confine the rides to two half days. I found the rickshaw as heavy as a buggy, and when empty it was hard to pull up hill; therefore I walked on the up grades, and let the rickshaw boys draw me when the road was level or down hill. An interpreter explained to them for me, that when they heard the word "Stop!" I wished to view a bird. They soon became very observant of the birds, pointing them out to me, and stopping for Doves and Mynas, and other species that I may have seen scores of times that day. They looked at the birds through the binoculars, and when I was using the glasses they picked flowers with which to deck my rickshaw. They helped me over slippery and dangerous paths with as much gallantry as any one could show, even though they were unlettered and more than half naked. On the whole the three rickshaw boys seemed to have had a very enjoyable day.

The drive of seventeen miles from the station to the village was made by tonga, with a change of horses occurring every three or four miles, making use of ten horses for the trip going up. The return journey was about as disagreeable as rapid traveling could make it. For pleasure I should choose neither tonga nor elephant-back riding. The sample I had of the latter was on the excursion to the deserted city of Amber. In answer to those asking about the sensations of such riding it may be said that one feels rather high up in the world when he can put his foot on the roof of a porch that he is passing. The gait of the elephant produces a churning motion, which in turn inspires the thought that there has been a nicely balanced adjustment in the distribution of the animal kingdom, inasmuch as the elephant and the Jersey cow are not indigenous to the same territory. If they were, those partial to a milk diet, when journeying on an elephant, might sometimes find themselves full of butter.

Owing to an accident to the automobile on the return trip from Futehpur Sikri there was afforded me experience with two other styles of vehicles. We, four passengers from the disabled automobile, chartered two ekkas to take us into Agra. The short and fat Englishman, who was my companion in the ekka, counseled a tight hold upon the bamboo poles that supported the canopy-top of the ekka. The driver started the little pony off at a rattling pace. We were rattled, jolted, bounced about for a matter of fifteen or twenty rods; whatever the distance, it gave time for reflection: for wondering if flesh and bones could survive two miles of such traveling. The pony stopped; the driver gave him the lash; the poor pony, quite untaught regarding the laws of gravitation, reared upon his hind legs, and the two heavy-weight passengers gently bore the back end of the ekka to the ground. If we had gone down suddenly it would have meant a broken arm for me instead of a bad bruise. Our weight held the pony in mid-air, between the thills, and he remained in this unnatural position when we drove away in the next vehicle that came along, which was a gharry. The moon-faced young Englishman appeared to enjoy the adventure, perhaps he is laughing still, as it was the last I saw of him.

Whether the terrible jolting one gets on the railway cars of India is due to the roadbed or to the cars themselves I am unable to say. Dust there is in unstinted abundance, but no crowding for the first-class passengers. Except for a few hours on four occasions I had a whole compartment to myself; the dimensions of some of these were about seven by ten feet, and they were intended to seat six or eight passengers. The seats are uncomfortable, being too wide for seats and too narrow for beds. By keeping one's back pressed tightly against the back of the seat while sleeping the passenger does not run great risk of being jolted off, but such a position becomes very tiresome. I found two easy methods of relief: either the positions of head and feet may be reversed, or better still, one can move self and bedding to the

couch on the opposite side of the car, — an efficient though elaborate way of turning over in bed.

White-breasted Kingfisher (*Halcyon smyrnensis*) seems like a very tame and commonplace name for the gorgeous creature to which it belongs. Most assuredly the bird is white-breasted, but its beak is coral-red; its head, sides of neck and body, its abdomen and under tail coverts are a rich dark chestnut; there is greenish blue on scapulars and wings; cerulean blue and dull blue on large portions of its plumage. It is a very pretty bird and of common occurrence, haunting quiet places in city parks, as well as less frequented spots. The Pied Kingfisher (*Ceryle rudis*) is spotted black and white, as its name implies. It may be seen hovering over the water in search of its prey in a manner similar to some of the terns. A bird larger than either of the fore-going species is the Large Crested Black and White Kingfisher (*Ceryle guttata*). It was seen in but one place. The same is true of the Wire-tailed Swallow, but the pretty Red-rumped Swallow was seen frequently. At some hours of the day from my hotel window in Bombay I could look down on many individuals of the swallow family, busily "policing the air," that appeared to be none other than the Swallow (*Hirundo rustica*), common to northern Europe in the summer, but at that time in their winter retreat. With much less certainty is it possible to designate as Crag Martins the birds that were seen flying before the vertical fronts of some of the cliffs of Mount Abu.

In comparison with the numerous species and subspecies of native sparrows abounding in America the continents of the Old World seem singularly barren of sparrow life, except that furnished by *Passer domesticus* and some of its very near relations. My notes record the impression that in Bombay I found the House Sparrow as conspicuous and noisy as at home. In Calcutta additional proof of its offensiveness was offered by a pair that had gained entrance to the dining-room and was flying about far out of reach beneath the lofty ceiling.

Both Doves and Pigeons are very abundant in India. I

think I saw the Spotted Dove (*Turtur suratensis*) more frequently in the cities than elsewhere, and the Little Brown Dove (*Turtur cambayensis*) was found oftener beside the country road. So plentiful in some places is the Blue Rock Pigeon (*Columba intermedia*) that it seems to be a positive nuisance: this is true in particular of Jaipur, where the species literally covers large spaces in the wide streets, where it crowds into and defiles such buildings as the Hall of Public Audience of the Maharajah. This is a building that no one ought to fail to see, for without ocular confirmation it is hard to believe that there could have been built such a hideous structure within a short railway ride of the Taj Mahal at Agra, or the Hall of Private Audience at Delhi.

The Vultures have been left until the last; and it seems obviously proper to make those species of this family the very last, that would make the last of us very speedily if they got a chance. Consequently the White Scavenger Vulture (*Neophron ginginianus*) claims first consideration. It is a common species, and was seen wherever I went, except near the coast From my window in the Cecil Hotel, Agra, one of them was seen sitting in a bulky nest in a neem tree not more than twenty-five feet away. A position on the roof, overlooking the nest, was sought at once, but the nest was empty when the bird left. Such a location was highly advantageous for study when the nest life was in progress.

The White Scavenger Vulture at times has a woe-begone, dishevelled appearance, as if it appreciated the contumely heaped upon it by mankind. In view of its single shortcoming it is a pity that the bird cannot talk back. If it could its reply would probably be something like this: "Oh, vainglorious man! wherefore do you cast such volumes of reproach upon me? Am I not a faithful spouse and a devoted parent? Do you ever see me figuring in the divorce courts because of inconstancy, or my offspring deserted by me, left to the tender mercies of strangers in my tribe? Do you see me robbing my brothers or slaying millions of them in unholy war? Your sole accusation against me is that I am a scav-

enger and not too proud to eat human ordure; but what living creature do I harm by my tastes? Certainly I take nothing that turns me into a frenzied fiend so that I beat my mate, kill my offspring, and endanger the lives or happiness of my neighobrs, nor do I smoke a filthy weed that poisons the air for every one near me. Oh, you contemptible man! I have seen you fill with smoke the air of a small enclosure, where were others of your kind, men and women, unable to escape, who were sickened and gasping in utter misery. So I say unto you, critical man, that unless you can show more decent taste, you have no right to criticise mine."

Besides the White Scavenger at least three other species of Vultures were seen: the Black or King Vulture (*Ortogyps calvus*), the White-backed Vulture (*Pseudogyps bengalensis*), and the Long-billed Vulture (*Gyps tenuirostris*). In most instances they were distant about an eighth of a mile, but sometimes no more than half of that distance. As a rule they were in desolate places: along a river bank or about some ruin. Across the river from the Massacre Ghat at Cawnpore were several of these birds. While using my binoculars I saw one waiting for a dog to finish its repast. The object being devoured looked very human, and my guide affirmed that it was the body of a man that had drifted ashore some days before. Two human skulls lay directly in front of the Taj Mahal on the banks of the Jumna River and were detected when the glasses were turned upon some Plovers feeding there. Such ghastly finds are not so surprising in a country teeming with millions of Hindus, whose religion forbids the burying of the dead, and where the cost of the wood for the funeral pyre is almost prohibitory for some families. On the morning of my visit to the bathing ghats of Benares I witnessed two Hindu funerals: the first was that of a woman, and her nearest relative, after walking five times around the pyre, applied the torch; the other was that of an infant, whose body was weighted with stones preparatory to its being cast into the Ganges, for this is the disposal made of the bodies of Hindu children who die before they have

attained the age of three years. In this river were hundreds of pious Hindus taking their sacred baths, energetically scouring their teeth, or drinking the water dipped up by the hand.

The immense number of tombs to be seen outside of some of the cities tends to create the feeling that India is one vast graveyard, but these are Mohammedan tombs, showing the fruits of death's harvest for a few hundred years only. Another religious sect, the Parsee, holds that the elements are too sacred to be polluted by the dead, hence their bodies cannot be burned nor cast into the water as are the Hindu's, neither must they desecrate the earth by burial therein. To obviate these things Towers of Silence are provided on which the bodies of dead Parsees are exposed to the Vultures — the White-backed and the Long-billed are the species in Bombay that are said to frequent these towers, there being about three hundred birds that divide their time between the towers and the slaughter-houses. In Bombay the stated hours for funerals are nine o'clock in the morning and five in the afternoon. The Vultures begin to assemble regularly an hour or two before funeral time. When I was there at three p. m. from twenty to thirty birds had arrived and were waiting on the walls. They are said to complete their task within the space of two hours. There are five of the towers; some have private ownership, one is for criminals, suicides, and for the bodies of the unfortunate Parsees that chance after death to be touched by some one outside the caste. The principal tower is twenty-five feet high and nearly ninety feet in diameter. The approach to this strange place is up a hill, through a little park made beautiful by trees and flowers and the songs of birds.

Notwithstanding some unpleasant impressions the memories of India are mainly agreeable ones, and it appears to be a prime favorite with most travelers. To one spot especially I longed daily to return. That was the natural history museum in Lucknow. It is my purpose to speak of it more fully in a chapter devoted to the museums that were

visited. It may be sufficient here to say that no bird student should fail to visit it.

Enough of the abundance and fearlessness of the birds was seen to create a feeling of certainty that it is a land where one would gladly tarry for the sake of bird study. From the books we may learn of the many species that build their nests in, close to, or upon the walls of human habitations, and in addition to these the number of hole-nesting species appears to be unusually large. Of such are the Starling, Roller, Hoopoe, Magpie Robin, Brown-backed Robin, Common and Brahminy Mynas, Southern Yellow Tit, Grey Tit, Parrots, Crimson-breasted Barbet, and Woodpeckers, all of them nesting in holes in trees or buildings, while in holes in banks there nest the Bank Myna, Common Bee-eater, and the Kingfishers. When properly managed with boxes having peep-holes for observations, the home life of hole-nesting birds becomes easy to watch and eminently opportune for thorough investigation. To watch the progress of the nest life, from egg laying until the fledgling leaves the nest, at no greater distance than sixteen to twenty-two inches from the eye has been my privilege with four hole-nesting species: the Northern Flicker, the Screech Owl, the Sparrow Hawk, and the House Wren, and deep designs are planned for laying bare the privacy of several others. Similar methods could easily be adopted for watching the home life of Indian birds; and there naturally arises the wish for a thousand years in order to give a few decades to the study of bird life in India.

BIRDS ABOUT A COUNTRY HOME IN WINTER

BY ALICE EDGERTON.

Our home is ideally situated for bird study. There is a woodlot of several acres to the east, the trees on that side coming down to the house. In this wood is a small alder swamp surrounded by thickets of ironwood. To the north and west is another wood which joins a neighbor's woodlot. Together they form a wooded area of considerable size. In the rear, and near enough to shade the house, are three black locusts, an ancient shellbark hickory, and five red and sugar maples. Thus we are literally in the woods.

When I became interested in bird study I did not need to lure them to the yard, they were already there and very much at home. One who could use a saw and hammer fashioned for me a lunch counter from a weathered board, which we fastened in a small prune tree twenty-five feet from the back porch. On it we put seeds, crumbs, and later corn which all seemed to like except the English sparrows — they had been too partial to the crumbs. We also tacked suet to one of the locusts trees and our guests were bidden to the feast. The came readily and fearlessly and my fun began.

My plans were well laid: the suet was for Woodpeckers, Nuthatches, Titmice and Chickadees; the corn for Cardinal Grosbeaks, Juncos, Tree Sparrows, Song Sparrows, and Blue Jays. But how they went awry, those plans! Blue Jays varied their corn diet with suet. Tufted Titmice, while clearly preferring the suet, came freely to the corn if other birds were at the suet, and I could not discover that the Nuthatches preferred one above the other. This is where the plans were wrong. The Nuthatch is a seed eater also though it gets more credit for the destruction of the grubs it finds under the bark. As for the Juncos and Tree Sparrows, they came not at all, but chose the weed seeds in the garden. They eat crumbs and grain if I throw them on the ground.

The numerous Downy Woodpeckers come to the suet by

twos and threes and singly. If other birds are there they are soon driven away and the Downies occupy it by right of conquest.

On occasions a Hairy Woodpecker comes also, but it is sometimes absent for weeks and never comes regularly.

Last winter a female Red-bellied Woodpecker came frequently and this winter I see both birds. They are very noisy and more timid than the Downy Woodpecker which seems afraid of nothing.

At the lunch counter all birds but the Cardinal have puzzled over what to do with the large grains of corn. Cardinals, by virtue of their large bills, take the grains whole. They are the only winter birds that come to the yard quite alone, and having no other bird to warn of the cat's approach, they are nervous and timid. I have recently noticed that a male Cardinal roosts at night in an old shack hardly larger than a dog kennel which the children use in summer for a playhouse. He comes at sunset for corn, signifies his displeasure, if the counter is bare, by a few sharp chirps and then flies to the open window of the playhouse. I think it likely that it is the same bird that spent the summer nights in a fruit tree near the house. We always knew when he came by the loud chirps he gave as he flew into the thick leaves.

When the Tufted Titmice come to the counter they bring all their relatives and the Chickadees. They are often to be seen on the loosely shingled roof of the sugar-house working around the shingles. It leads me to suppose they have hidden things in the roof. Their solution of the corn problem is to hold the grain to the limb with one foot while it is pounded to pieces. They call, "Peter-Peter" if the day is fair and dine together in brotherly love.

Not so the Blue Jays, however. We all know they have their little prejudices. Among themselves they live in harmony while it is winter. As the grain of corn is too large to swallow whole it is taken in the bill by one end, the free end is then pounded off and wasted. The Jays sometimes carry away corn but I have never seen where it was hidden.

The Nuthatches also do this. I have watched others do it in the autumn but not in winter.

The Nuthatches manage the corn very well indeed. The grain is carried to one of the locusts where it is wedged firmly in a crotch in the bark and hammered to pieces. This reminds me of their habit of putting beech nuts into crotches of bark to be hatched open. One bird has its separate fork which it never fails to use. It will be a red letter day at Oakside when a Red-breasted Nuthatch comes to the feeding station in winter. So far I have seen them in spring or autumn only.

Sometimes there is a sudden shadow on the counter made by the wide wings of a Hawk. The two Hawks I see in winter are the Red-tailed Hawk and the Cooper Hawk, and I usually see one individual of each species throughout the winter. The Red-tailed Hawk that has been hunting over our pastures and meadows is remarkable for the brilliant red of its tail. I have not been able to determine just what this one lives on in the winter, but I rarely see it kill anything larger than a mouse. We did at one time, however, find a badly wounded Grouse which it had dropped as we frightened it away. The deep wounds made by the talons of the Hawk in the firm flesh of the Grouse testified to its strength.

The Cooper Hawk has ruined its reputation by coming too near the house and dieting on young chicken. There is a rapidly uttered, panic-stricken cry the Bob-Whites make when they are chased by a Hawk. I hear it often and register another complaint against Cooper Hawk.

My winter friend, the Screech Owl, I seldom see since it gave up its friendly habit of lodging in a hollow maple in the yard, but it has a remarkable voice and I hear it every night — also a larger relative whose voice I do not know well enough for certain identification.

The large number of fruitful beech trees I consider responsible for the covey of Ruffed Grouse that always winters in our woods. They come often to the thickets nearest the house and act out whole plays within the range of my glass. One sunny morning as a Grouse crossed the lane, a Hawk

screamed overhead and suddenly there was no Grouse at all, but only a spot in the road that was nothing but a pile of leaves and dust. When the Hawk had sailed over the pile of leaves took wings and flew into the woods.

I had heard for years a clear, far-reaching cry and wondered over it, before I made the discovery that it was the clan-cry of the Quail. At sunset from some fence corner a clear single-syllabeled whistle goes forth, and is answered from far and near by the separated Bob-whites. If there has been no unusual scattering in the covey that day there is no curfew. It is to be heard every evening during the rabbit hunting season and I have wondered if the covey dispersed voluntarily for safety or whether it was frightened apart. The latter is the more probable conclusion.

The casual visitor to Oakside Farm I have not mentioned. Those observers who can go far afield can furnish larger and more interesting lists. My object was merely to tell of the birds to be seen from a farmhouse porch. It is a curious fact that my friend in the village sometimes feeds as many as five male Cardinals at once, while I never have more than one. This seems to me to indicate that we farmer folk who have excellent advantages for bird study, neglect them, and carelessly leave both the study and feeding of birds to the villagers. How shall we best serve our small friends?

Columbiana, Ohio.

COMPARATIVE PERIODS OF DEPOSITION AND INCUBATION OF SOME NORTH AMERICAN BIRDS.

BY FRANK L. BURNS

Very little seems to be known regarding the exact periods of incubation of our birds. Captain Bendire's observations appear the most extensive until recently when some attention has been given the subject by various observers, mostly incidental to the intensive study of a single nest or perhaps a colony of one species or another.

My conclusions are based upon the statements of authors, the manuscript notes of Messrs. T. A. Elliot, Jr., North East Harbor, Me.; John F. Ferry, Chicago, Ill.; Henry Link, Waterloo, Ind.; Angus McKennon, DeFuniak Springs, Fla.; Leonard S. Pierson, Wayne, Pa.; Alfred C. Redfield, Cambridge, Mass.; A. C. Read, Isle of Pines, Cuba; Charles H. Rogers, Princeton, N. J.; Ernest W. Vickers, Ellsworth, Ohio; Miss Farida Wiley, Sidney, Ohio, and my own observations.

The duties of incubation are usually performed by the female, often with the assistance of the male, or the male may not participate in the actual brooding process but may carry food to the female and later assist in caring for the young.

Exact knowledge of the amount of assistance given the female by her mate during the incubating season does not appear to be of much importance in consideration of the comparative periods. When one sex forages and incubates unaided, however, the period is usually prolonged beyond that of the normal of the species accustomed to the advantage of an assisting mate; or possibly in rare instances like that of the *Trochilidæ*, Hummingbirds, of species of an entirely different group of similar size. Clark (*Cf. Auk*, xx, 162) gives an instance of a male Bob-white incubating a late clutch of eggs for 28 days before hatching, apparently several days over the regular period; while the female was leading her first brood about the vicinity.

Apparently most colonial species are doubly monogamous; birds breeding in colonies can seldom conceal their eggs from enemies, therefore have the greatest need of constant protection by either sex.

Most hole-nesting species are doubly monogamous, though there are some notable exceptions; one would naturally seek the reason for this in the greater need of animal heat in lieu of the direct rays of the sun to further the rate of incubation; rather than that of protection from enemies, of which there is less need than in the instance of the colonial birds.

In many species and groups where one sex is much more

conspicuously or highly-colored than the other, the more plainly-garbed sex frequently assumes all the duties of incubation and not infrequently, of the young, also.

Double monogamy occurs in many instances in every group producing præcocial young, but it is probably more common in the Altrices; double monogamy, however, as generally defined, is not characteristic of the highest type, since of the *Turdidæ* and *Corvidæ* (except the subfamily *Corvinæ*) the two Passerine families most in dispute for first rank; the male does not appear to render any assistance in incubation.

According to present information, both sexes take regular turns at incubating in at least some species of the *Podicipidæ, Gaviidæ, Alcidæ, Laridæ* (not including *Anous stolidus*, Noddy), *Diomedeidæ, Procellariidæ, Phæthontidæ, Pelecanidæ, Anserinæ, Cygninæ, Phœnicopteridæ, Ibididæ, Ardeidæ*, some of the *Scalopacidæ*, (*Philohela minor* Woodcock, *Gallingo delicata* Wilson's Snipe, *Pelidna alpina sakhalina*, Red-backed Sandpiper), *Charadriidæ* (*Oxyechus vociferous* Killdeer), the genus *Colinus* only of the Gallinaceous birds, *Columbidæ, Buteonidæ*, (except *Aquila chrysaëtos* Golden Eagle), *Striges* (except the genus *Otus*), the genus *Coccyzus*, *Alcedinidæ*, *Picidæ, Caprimulgidæ*, and of the *Passerines; Corvinæ, Xanthocephalus xanthocephalus* Yellow-headed Blackbird, *Sturnella magna* Meadowlark, the genus *Quiscalus*, most of the *Fringillidæ* (the most notable exceptions being of genera, including nearly all of the most brilliant and conspicuously plumaged males, not including *Zamelodia ludivicana* Rose-breasted Grosbeak), *Hirundinidæ* (not including *Progne subis* Purple Martin), *Bombycilla cedrorum* Cedar Waxwing, *Protonotaria citrea* Prothonotary Warbler, *Dendroica æstiva æstiva* Yellow Warbler, *D. pensylvania* Chestnut-sided Warbler, *Setopaga ruticilla* Redstart, *Vireonidæ* (not including *V. philadelphia* and *L. solitarius solitarius*), *Anthus pratensis* Meadow Pipit, the genera *Toxostoma, Troglodytes*, and *Sitta canadensis* Red-breasted Nuthatch.

Incubation is performed solely by the female in *Anous stolidus* Noddy, the *Anatidæ* (except *Anserinæ* and *Cygninæ*)

some of the *Rallidæ, Scolapacidæ* (*Bartramia longicauda* Upland Plover, *Actitis macularia* Spotted Sandpiper), *Charadriidæ, Gallinæ* (genera *Bonasa, Centrocercus* and *Meleagris*), the genus *Otus, Trochilidæ* (at least *A. colubris* and *S. rufus*), *Tyrannidæ* (perhaps not including *E. wrighti* and *P. rubinus mexicanus*), *Corvidæ* (except *Corvinæ*), *Dolichonyx oryzivorus* Bobolink, *Agelaius phœniceus* Red-winged Blackbird, subgenus *Icterus, Hesperiphona vespertina vespertina* Evening Grosbeak, *Carpodacus purpureus purpureus* Purple Finch, *Astragalinus tristis tristis* Goldfinch, *A. t. salicamans* Willow Goldfinch, *Plectrophenax nivalis nivalis* Snow Bunting, *Passerina cyanea* Indigo Bunting, *P. ciris* Painted Bunting, *Piranga erythromelas* Scarlet Tanager, genus *Lanius, Mniotiltidæ* (with some exceptions), *Mimus polyglottos* Mockingbird, *Dumetelea carolinensis* Catbird, *Thryothorus ludovicianus miamensis* Florida Wren, *Certhia familiaris americana* Brown Creeper, *Penthestes atricapillus atricapillus* Chickadee, and the *Turdinæ*.

Incubation receives the attention of the male only, in the *Phalaropodidæ*, and some of the *Scolopacidæ* (*Eurynorhynchus pygmeus* Spoon-billed Sandpiper).

The Passerine genera *Molothrus* and *Tangavius* are parasitic and of course do not incubate at all.

The period of deposition of a species seems to depend mostly upon the general productiveness of the group to which it is most nearly related; and to a lesser extent, upon the relative size of the species and its egg to that of the group, the maximum sometimes requires a longer period to recuperate.

A species belonging to a group capable of and most commonly producing the maximum number of eggs in a set or in a season, ordinarily deposit an egg daily. This includes the *Colymbi, Anatidæ, Rallidæ, Scolapacidæ, Pici, Cuculidæ* and *Passeres* (there are instances of the deposition of two eggs in one day by the prolific *Colaptes auratus luteus* Northern Flicker, *Sayornis phœbe* Phœbe, *Passer domesticus* European House Sparrow, and *Spizella passerina passerina* Chipping Sparrow.)

Our largest Passerine, *Corvus corax principalis* Northern Raven, may occasionally deposit its eggs at intervals of every other day.

Coccyzus americanus Yellow-billed Cuckoo, and *C. erythrophthalmus* Black-billed Cuckoo, are subject to variation according to locality; individuals inhabiting the Atlantic slope occasionally seem to require an interval of from two to eight days, but as both species have been known to drop their eggs in other birds' nests and the average number in a set falls away below that of the same species in the West, probably the most satisfactory explanation of the apparent departure from the normal daily deposition, may be found in the parasitic tendencies of the eastern individual. Not impertinent to the subject, it may be stated that the parasitic nature of the European Cuckoo has been erroneously attributed to its irregular deposition and consequent inability to assemble a clutch of eggs; however this may be, our parasitic Cowbird has been known to drop four or five eggs in as many days, though like the Bobolink, it may now and then depart from the normal.

Members of a group normally or commonly producing two eggs, deposit at less frequent periods, the *Columbidæ, Caprimulgidæ* and *Trochilidæ* lay on alternate days. The larger *Gaviidæ* two or three days apart, and a week or ten days may elapse before the *Cathartidæ* deposit the second egg. The *Raptores* require from one to three or four days interval generally, depending upon size, the genera *Aquila, Haliœetus* and *Bubo,* which include some of the largest species and frequently deposit two eggs only, the interval is the maximum.

Birds laying daily, ordinarily but not invariably, begin incubation after the set is completed. The occasional irregularities in incubation are often traceable to exceptional conditions; cold or stormy weather at the time of deposition may induce the parent to cover the nest for a time sufficient to affect the first laid eggs.

Birds ordinarily exhibiting irregular deposition usually begin incubation with the first (sometimes the second or third)

egg laid: this naturally results in irregularities in hatching and maturing of nestlings; far more frequent in the Altrices for the obvious reason that belated embryos of *Præcocials* usually perish in the shell after the parents desert the nest with the first hatched young.

The period of incubation seems to depend almost altogether upon mere size or bulk; conditions being equal, the larger the egg generally the longer the period of incubation. This rule would seem to be good, with some exceptions; but more truly applicable to the various members of the several groups, in some instances possibly not higher than families.

The assertion that the length of incubation depends upon the state of perfection in which the young issues from the shell, i.e. chicks able to leave the nest almost immediately after hatching (præcocial) require a much longer time than those hatched in a helpless state (altricial), appears unreliable when applied generally, even though the former averages larger eggs. The absence of data on comparative sizes, weights or other means of equalization render it somewhat difficult to prove, but for some of the many probable exceptions compare in size and period of incubation the Petrels with the smaller Terns, the Tropic Birds with the Gulls, the larger *Raptores* with the *Anatidæ*, the Woodpecker with the Coot, the smaller *Raptores* with the smaller *Gallinæ*, the Kingfisher with the Bob-white, or even the Chat with the Spotted Sandpiper. The Noddy, departing from the typical *Sterninæ* in its habit of nesting in bushes and there rearing its young for upwards of two months (therefore not typical præcocial) is said to incubate for 35-36 days, which seems a much longer period than that of any other of its præcocial family.

Birds nesting in snug rock crevices, tree cavities, or in covered nests of any descriptions capable of keeping out the weather and conserving the heat from the birds' body, doubtless are at no great disadvantage over the loss of the direct rays of the sun; but species nesting deep in earthy burrows (Puffins, Petrels and Kingfishers) or in draughty flues

(Chimney Swifts) with little or no protective lining, appear at every disadvantage in hastening the development of the embryo; and the comparatively longer periods of incubation would seem to foster this hypothesis.

There are little data available leading to the effects of climate and season on the period of incubation of individuals of the same species. It is quite probable that the most variable periods occur in cool rather than warm climates, and more especially in a season of violent changes. Knight (Cf. Birds of Maine) in considering the period of incubation of some of the *Fringillidæ* (*Lanius ludivicianus migrans* and *Geothlypis trichas trichas*) recognized a variation of from two to four days, due to weather conditions, closeness with which the bird brooded and other correlating circumstances. It is well known that up to a certain stage of development of the embryo, the eggs may be subjected to a cooling process by exposure to the weather for some time without endangering the embryo beyond retarding the growth temporarily and lengthening the period somewhat beyond the normal time; and also, that the sun may relieve the parent bird of part of her task unless the temperature is driven too high and the germ destroyed.

The number of days of incubation of the species in the list appended has been compiled from various sources, and in many instances from single records, some of which may be inaccurate and are questioned; others may be subject to revision; but none are included without good authority.

Podilymbus podiceps. Pied-billed Grebe.—21 (?) days.
Gavia immer. Loon.—29 days.
Cepphus grylle. Black Guillemot.—21 days.
Larus argentatus. Herring Gull.—26 or 27 days.
Larus franklini. Franklin's Gull.—18 or 20 days.
Sterna hirunda. Common Tern.—21 days.
Sterna dongalli. Roseate Tern.—21 days.
Sterna fuscata. Sooty Tern.—26-29 days.
Hydrochelidon niger surinamensis. Black Tern.—17 days.
Anous stolidus. Noddy.—35-36 days.
Oceanodroma leucorhoa. Leach's Petrel.—30 (?) days.

Phæthon americanus. Yellow-billed Tropic Bird.—28 days.
Sula bassana. Gannet.—39 days.
Phalacrocorax urile. Red-faced Cormorant.—21 days.
Pelecanus erythrorhynchos. White Pelican.—29-30 days.
Pelecanus occidentalis. Brown Pelican.—28 days.
Mergus americanus. Merganser.—28 days.
Mergus serrator. Red-breasted Merganser.—26-29 days.
Anas platyrhynchos. Mallard.—26-28 days.
Anas rubripes. Black Duck.—26-28 days.
Somateria mollissima borealis. Northern Eider.—36 (?) days.
Branta canadensis canadensis. Canada Goose.—28-30 days.
Olor cygnus. Whooping Swan.—35-40 days.
Phœnicopterus ruber. Flamingo.—28 days.
Guara alba. White Ibis.—21 days.
Plegadis autumnalis. Glossy Ibis.—21 days.
Botaurus lentiginosus. Bittern.—28 days.
Ardea herodias herodias. Great Blue Heron.—28 days.
Butorides virescens virescens. Green Heron.—17 days.
Nycticorax nycticorax nævius. Black-crowned Night Heron.—24 (?) days.
Prozana carolina. Sora Rail.—14 (?) days.
Fulica americana. Coot.—14 days.
Philohela minor. Woodcock.—20-21 days.
Bartramia longicauda. Bartram's Sandpiper.—17 (?) days.
Actitis macularia. Spotted Sandpiper.—15-16 days.
Hæmatopus palliatus. Oyster-catcher.—14 (?) days.
Colinus virginianus. Bob-white.—24 days.
Lophortyx californica californica. California Quail.—24 (?) days.
Lophortyx californica vallicola. Valley Quail.—24 (?) days.
Lophortyx californica gambeli. Gambel's Quail.—24 days.
Dendragapus obscurus obscurus. Dusky Grouse.—24 days.
Dendragapus obscurus fuliginosus. Sooty Grouse.—24 days.
Bonasa umbellus umbellus. Ruffed Grouse.—21 days.
Bonasa umbellus togata. Canada Ruffed Grouse.—21 days.
Lagopus lagopus lagopus. Willow Ptarmigan.—18 (?) days.
Tympanuchus americanus americanus. Prairie Chicken.—21 days.
Pediœcetes phasianellus columbianus. Columbian Sharp-tailed Grouse.—21 days.
Pediœcetes phasianellus campestris. Prairie Sharp-tailed Grouse.—21 days.
Centrocercus urophasianus. Sage Grouse.—22 days.
Melcagris gallopavo silvestris. Wild Turkey.—28 days.
Phasianus colchicus. English Pheasant.—23-24 days.
Columba fasciata fasciata. Band-tailed Pigeon.—18-20 days.

Columba livia. Domestic Dove.—14 days.
Ectopistes migratorius. Passenger Pigeon.—14 days.
Zenaidura macroura carolinensis. Mourning Dove.—12-14 days.
Melopelia asiatica. White-winged Dove.—18 days.
Chæmepelia passerina terrestris. Ground Dove.—12 days.
Cathartes aura septentrionalis. Turkey Vulture.—30 days.
Cathartes uruba. Black Vulture.—30 days.
Circus hudsonius. Marsh Hawk.—26-28 days.
Accipiter velox. Sharp-shinned Hawk.—21 days.
Accipiter cooperi. Cooper's Hawk.—24 days.
Buteo borealis borealis. Red-tailed Hawk.—28 days.
Buteo borealis calurus. Western Red-tail.—28 days.
Buteo lineatus lineatus. Red-shouldered Hawk.—27-28 days.
Buteo swainsoni. Swainson's Hawk.—25-28 days.
Buteo platypterus. Broad-winged Hawk.—23-25 days.
Urubitinga anthracina. Mexican Goshawk.—24-28 days.
Archibuteo lagopus sancti-johannis. Rough-legged Hawk.—28 days.
Archibuteo ferrugineus. Ferruginous Rough-leg.—28 days.
Aquila chrysaëtos. Golden Eagle.—35 days.
Haliæetus albicilla. Gray Sea Eagle.—30 days.
Haliæetus leucocephalus. Bald Eagle.—30 days.
Falco peregrinus anatum. Duck Hawk.—28 days.
Falco columbarius columbarius. Pigeon Hawk.—21 (?) days.
Falco sparverius sparverius. Sparrow Hawk.—29-30 (?) days.
Pandion haliaëtus carolinensis. Osprey.—27-28 days.
Aluco pratincola. Barn Owl.—21-24 days.
Asio wilsonianus. Long-eared Owl.—21 days.
Asio flammeus. Short-eared Owl.—21 days.
Cryptoglaux acadica acadica.—Saw-whet Owl.—21 (?) days.
Otus asio asio. Screech Owl.—21-26 days.
Bubo virginianus virginianus. Great Horned Owl.—28-30 days.
Bubo virginianus pallescens. Western Horned Owl.—28 days.
Bubo virginianus pacificus. Pacific Horned Owl.—28 days.
Speotyto cunicularia hypogæa. Burrowing Owl.—21-28 days.
Micropallas whitneyi. Elf Owl.—14 days.
Geococcyx californicus. Road-runner.—18 days.
Coccyzus americanus americanus. Yellow-billed Cuckoo.—14 days.
Coccyzus erythrophthalmus. Black-billed Cuckoo.—14 days.
Ceryle alcyon. Belted Kingfisher.—23-24 days.
Dryobates villosus villosus. Hairy Woodpecker.—14 days.
Dryobates villosus hyloscopus.—Cabanis's Woodpecker.—15 days.
Dryobates pubescens medianus. Downy Woodpecker.—12 days.
Dryobates scalaris bairdi. Texas Woodpecker.—13 days.
Xenopicus albolarvatus. White-headed Woodpecker.—14 days.

Picoides americanus americanus. Three-toed Woodpecker.—14 days.
Sphyrapicus varius nuchalis. Red-naped Sapsucker.—14 days.
Sphyrapicus ruber ruber.—Red-breasted Sapsucker.—12-14 days.
Phlœotomus pileatus pileatus. Pileated Woodpecker.—18 days.
Melanerpes erythrocephalus. Red-headed Woodpecker.—14 days.
Asyndesmus lewisi. Lewis's Woodpecker.—14 days.
Centurus carolinus. Red-bellied Woodpecker.—14 days.
Centurus aurifrons. Golden-fronted Woodpecker.—14 days.
Centurus uropygialis. Gila Woodpecker.—14 days.
Colaptes auratus luteus. Flicker.—11-14 days.
Antrostomus vociferus. Whip-poor-will.—17 days.
Chordeiles virginianus. Nighthawk.—16-18 days.
Chætura pelagica. Chimney Swift.—18 days.
Archilochus colubris. Ruby-throated Hummingbird.—14 days.
Archilochus alexandri. Black-chinned Hummingbird.—13 days.
Calypte costæ. Costa's Hummingbird.—14 days.
Calypte anna. Anna's Hummingbird.—14 days.
Selasphorus rufus. Rufus Hummingbird.—12 days.
Muscivora forficata. Scissor-tailed Flycatcher.—12-13 days.
Tyrannus tyrannus. Kingbird.—12-13 days.
Tyrannus verticalis. Arkansas Kingbird.—12-13 days.
Tyrannus rociferus. Cassin's Kingbird.—12-14 days.
Myiarchus crinitus. Crested Flycatcher.—13-15 days.
Myiarchus cinerascens cinerascens. Ash-throated Flycatcher.—15 days.
Sayornis phœbe. Phœbe.—12-14 days.
Sayornis sayus. Say's Phœbe.—12 days.
Nuttallornis borealis. Olive-sided Flycatcher.—14 days.
Myiochanes virens. Wood Pewee.—12-13 days.
Empidonax difficilis difficilis. Western Flycatcher.—12 days.
Empidonax trailli trailli. Trail's Flycatcher.—12 days.
Empidonax trailli alnorum. Alder Flycatcher.—12 days.
Empidonax minimus. Least Flycatcher.—12 days.
Empidonax wrighti. Wright's Flycatcher.—12 days.
Pyrocephalus rubinus mexicanus. Vermillion Flycatcher.—12 days.
Pica pica hudsonia. Magpie.—16-18 days.
Cyanocitta cristata cristata. Blue Jay.—15-17 days.
Cyanocitta stelleri stelleri. Steller's Jay.—16 days.
Cyanocitta stelleri frontalis. Blue-fronted Jay.—16 days.
Aphelocoma woodhousei. Woodhouse's Jay.—16 days.
Aphelocoma californica californica. California Jay.—16 days.
Aphelocoma sieberi arizonæ. Arizona Jay.—16 days.
Perisoreus canadensis canadensis. Canada Jay.—16-18 days.
Corvus corax principalis. Northern Raven.—20-21 days.

Corvus cryptoleucus. White-necked Raven.—21 days.
Corvus brachyrhynchos. Crow.—18 days.
Corvus ossifragus. Fish Crow.—16-18 days.
Nucifraga columbiana. Clark's Nutcracker.—16-17 days.
Cyanocephalus cyanocephalus. Pinon Jay.—16 days.
Sturnus vulgaris. Starling.—11-14 days.
Dolichonyx oryzivorus. Bobolink.—10 days.
Molothrus ater ater. Cowbird.—10 days.
Xanthocephalus xanthocephalus. Yellow-headed Blackbird.—10 days.
Agelaius phœniceus phœniceus. Red-winged Blackbird.—10-14 days.
Sturnella magna magna. Meadowlark.—15-17 days.
Sturnella neglecta. Western Meadowlark.—15 days.
Icterus cucullatus nelsoni. Arizona Hooded Oriole.—12-14 days.
Icterus spurius. Orchard Oriole.—12 days.
Icterus galbula. Baltimore Oriole.—14 days.
Icterus bullocki. Bullock's Oriole.—14 days.
Euphagus carolinus. Rusty Blackbird.—14 days.
Euphagus cyanocephalus. Brewer's Blackbird.—14 days.
Quiscalus quiscula quiscula. Purple Grackle.—14 days.
Quiscalus quiscula æneus. Bronzed Grackle.—13-16 days.
Megaquiscalus major major. Boat-tailed Grackle.—15 days.
Megaquiscalus major macrourus. Great-tailed Grackle.—15 days.
Hesperiphona vespertina vespertina. Evening Grosbeak. 13-14 days.
Carpodacus purpureus. Purple Finch.—13 days.
Carpodacus mexicanus frontalis. House Finch.—13 days.
Astragalinus tristis tristis. Goldfinch.—12-14 days.
Plectrophenax nivalis nivalis. Snow Bunting.—21 (?) days.
Passer domesticus. European House Sparrow.—12-14 days.
Poœcetes gramineus gramineus. Vesper Sparrow.—11-13 days.
Passerculus sandwichensis savanna. Savannah Sparrow.—12 days.
Chondestes grammacus strigatus. Western Lark Sparrow.—12 days.
Zonotrichia albicollis. White-throated Sparrow. 12-14 days.
Spizella passerina passerina. Chipping Sparrow.—10-12 days.
Spizella pusilla pusilla. Field Sparrow.—13 days.
Junco hyemalis. Slate-colored Junco.—11-12 days.
Melospiza melodia melodia. Song Sparrow.—10-14 days.
Melospiza georgiana. Swamp Sparrow.—13 days.
Passerella iliaca schistacea. Slate-colored Sparrow.—12-14 days.
Pipilo erythrophthalmus erythrophthalmus. Towhee.—12-13 days.
Cardinalis cardinalis cardinalis. Cardinal.—12 days.
Zamelodia ludovicana. Rose-breasted Grosbeak.—14 days.
Passerina cyanea. Indigo Bunting.—12 days.
Passerina amœna. Lazuli Bunting.—12 days.
Progne subis subis. Purple Martin.—12-15 days.

Petrochelidon lunifrons lunifrons. Cliff Swallow.—12-14 days.
Hirundo erythrogaster. Barn Swallow.—11 days.
Iridoprocne bicolor. Tree Swallow.—14 days.
Bombycilla cedrorum. Cedar Waxwing.—10-12 days.
Phainopepla nitens. Phainopepla.—16 days.
Lanius ludovicianus ludivicianus. Loggerhead Shrike.—12-13 days.
Lanius ludovicianus migrans. Migrant Shrike.—13-16 days.
Vireosylva olivacea. Red-eyed Vireo.—12-14 days.
Lanivireo solitarus solitarus. Blue-headed Vireo.—10-11 days.
Protonotaria citrea. Prothonotary Warbler.—14 days.
Helmitheros vermivorus. Worm-eating Warbler.—13 days.
Vermivora pinus. Blue-winged Warbler.—10 days.
Vermivora chrysoptera. Golden-winged Warbler.—10 days.
Vermivora rubricapillus rubricapillus. Nashville Warbler.—11-12 days.
Dendroica æstiva æstiva. Yellow Warbler.—10-11 days.
Dendroica coronata. Myrtle Warbler.—12-13 days.
Dendroica magnolia. Magnolia Warbler.—12 days.
Dendroica pensylvanica. Chestnut-sided Warbler.—10-11 days.
Dendroica virens. Black-throated Green Warbler.—12 days.
Dendroica palmarum hypochrysea. Yellow-Palm Warbler.—12 days.
Dendroica discolor. Prairie Warbler.—14 (?) days.
Seirus aurocapillus. Ovenbird.—12 days.
Geothlypis trichas trichas. Maryland Yellowthroat.—12 days.
Icteria virens virens. Yellow-breasted Chat.—15 days.
Setophaga ruticilla. Redstart.—12 days.
Mimus polyglottos polyglottos. Mockingbird.—10 days.
Dumetella carolinensis. Catbird.—12-14 days.
Toxostoma rufum. Brown Thrasher.—11-14 days.
Toxostoma curvirostre curvirostre. Curve-billed Thrasher.—13 days.
Thryothorus ludovicianus ludovicianus. Carolina Wren.—12 days.
Thryothorus ludovicianus mimensis. Florida Wren.—14 days.
Thryomanes bewicki. Bewick's Wren.—10-15 days.
Troglodytes aëdon aëdon. House Wren.—11-13 days.
Telmatodytes palustris palustris. Long-billed Marsh Wren. 10-13 days.
Sitta canadensis. Red-breasted Nuthatch.—12 days.
Panthestes atricapillus atricapillus. Chickadee.—11-14 days.
Hylocichla mustelina. Wood Thrush.—14 days.
Hylocichla ustulata ustulata. Russet-backed Thrush.—14 days.
Hylocichla ustulata swainsoni. Olive-backed Thrush.—10-13 days.
Hylocichla guttata pallasi. Hermit Thrush.—12 days.
Planesticus migratorius migratorius. Robin.—11-14 days.
Sialia sialis sialis. Bluebird.—12 days.

THE WILSON BULLETIN

A Quarterly Magazine Devoted to the Study of Birds. Official Organ of the Wilson Ornithological Club

Edited by **LYNDS JONES**

PUBLISHED BY THE WILSON ORNITHOLOGICAL CLUB, AT CHICAGO, ILL.

Price in the United States, Canada, and Mexico, One Dollar a year, 30 cents a number, post paid. Price in all countries in the International Postal Union, $1.25 a year, 40 cents a number. Subscriptions may be sent to Lynds Jones, Oberlin, Ohio, or to Mr. P. B. Coffin, 3232 Groveland Avenue, Chicago, Ill.

OFFICERS FOR THE CURRENT YEAR

President: Dr. T. C. Stephens, Morningside, Sioux City, Iowa.

Vice-president: Geo. L. Fordyce, Youngstown, Ohio.

Secretary: Thos. L. Hankinson, Charleston, Ill.

Treasurer: P. B. Coffin, 3232 Groveland Ave., Chicago, Ill.

Editor "The Wilson Bulletin": Lynds Jones, Spear Laboratory, Oberlin, Ohio.

Business Manager: Gerard Alan Abbott, 853 Marquette Road, Chicago, Ill.

EDITORIAL

Pressure of copy and of work has interfered with preparing and printing notices of publications received. This feature will be resumed in the next issue of the Bulletin.

The unprecedented spring-like weather of middle February, which the central regions of the country experienced, brought the first group of migrants up to the lake region a full fortnight earlier than normal. It will be interesting to study the effect of this early movement upon the subsequent migrations.

The value of the Christmas Census which Bird-Lore inaugurated, and which, by the way, made unnecessary the New Year Census, which the writer started and continued for a few years, will not be questioned by any person who delves deeply into field studies. There should be at least two other similar censuses during the period of the vernal migration. One might well be made for the first day of April, which usually comes in the spring holiday season for teachers and pupils, and the other May 15. The first would occur in the interval between the migrations of the earlier species, and that of the later ones, and would furnish a basis for determining the population of the earlier species, for not many of them have gone north by that time. The Wilson Bulletin would gladly lend its pages for the publication of such a census this year. The other census would be made during the greatest flight of warblers and other small birds. Such a census could be only approximate because of the numbers of the birds, but it would be none the less interesting and valuable.

FIELD NOTES

GOLDEN EAGLE (*Aquila chrysaëtos*) IN OHO.

I recently met with an early record of this species in northern Ohio, which may be worthy of reference, as the original record is in a rare and obscure publication. Rev. Chas. Fox of Grosse Isle, Mich., has a note on this bird in his paper on "The Birds of Michigan" as follows: "Golden Eagle. The late Rev. William Wright had a live Golden Eagle, *Aquila chrysaëtos*, taken near Toledo, Ohio, in 1851." Fox, Peninsular Journ. of Medic., Vol. I, 1853, Oct., p. 160.

Mus. of Zoölogy, Ann Arbor, Mich. B. H. SWALES.

LARGE NUMBERS OF PINE SISKINS IN MAY.

Ever since coming to Marshalltown I have looked in vain for the Pine Siskin (*Pinus spinus*), until on May 8, 1914, as I passed a flock of singing goldfinches high in a clump of cottonwoods, I heard what I took to be a rather peculiar variation of the song. I stopped and examined the flock of perhaps twenty-five birds carefully through the glasses. Most of them were goldfinches without a doubt, but there were at least six which, in the early morning light, appeared darker than the rest. I took one of these and it proved to be a female pine siskin. I saw no more of them until the eleventh, when two were noted. On the thirteenth they became abundant about town and remained so until the eighteenth. A ten-mile trip along the river on the sixteenth found them present everywhere. Hardly a tree but had its quota of pine siskins. The last one was noted on May twenty-third. All my previous Iowa records have been in winter or early spring and I was rather surprised at this invasion.

Marshalltown, Iowa. IRA N. GABRIELSON.

SECOND BREEDING RECORD OF THE CHESTNUT-SIDED WARBLER (*Dendroica pensylvania*) FOR CHESTER COUNTY, PENNSYLVANIA.

Dr. Warren mentions having met with this bird in the county during the breeding season, but Samuel B. Ladd's discovery of the nest and five eggs (now in the collection of J. Parker Norris, Jr.) on the high ground near Frazer, May 27th, 1900, appears to be the first authentic county record. Believing that diligent search would reveal it nesting at Berwyn, which is only six miles from Frazer and on the same chestnut-covered ridge, I memorized the song of the migrant during the great northward movement of May 14th,

1914, and on the 30th had the good fortune to recognize it again at the edge of the woods (elevation about 525 feet) just back of my home. The male sang at intervals all day long from some one of the several chestnut-oak trees standing in a narrow slashing planted in wheat: "*Che-che-che-chew*," or after a short flight, the last two syllables were apt to have a peculiar twist "*wee-chee*," suggesting the Maryland Yellow-throat. The female was not noticed until June 6th, when the pair chased a Catbird about in the tangled thicket of chestnut, scrub and chestnut-oak, blackberry and raspberry bushes to the left of the clearing. Search as I might I was unable to locate the nest up to June 10th, when I judged the first brood, if not destroyed, had flown.

However, as I was returning home on July 10th a little before sundown, the pair betrayed by their actions on a dead tree at the opposite side of the small clearing to which I had devoted my search, that the nest was not far away. Soon the female, with drooping wings and trembling violently, flew down and revealed her nest twelve feet in the woods, about one and one-half feet from the ground in the prongs of a wild azalea bush. It contained two young not more than four days old and an infertile egg. The dainty little nest, taken after the young had flown, is composed of stems of the tumbling grass, vegetable down, narrow strips of plant and wild grape-vine bark; and (unlike the nest found by Mr. Ladd, which was lined with hair moss) lined with split grass and a few shreds of grape-vine bark. FRANK L. BURNS.

THE INTRODUCTION AND LOCAL DISTRIBUTION OF THE STARLING (*Sturnus vulgaris*) IN SOUTH-EASTERN PENNSYLVANIA.

It is well known that about a hundred Starlings were imported and liberated in Central Park, New York, 1890-91, and that in ten years the numerous progeny of these birds had spread northward as far up the Connecticut valley as Springfield, Mass., and southward over New Jersey.

It seems probable that the Delaware valley was reached via the Passaic, Raritan and Millstone rivers, and the naturally roving disposition of this species was excellently served in association with wandering bands of Crows, Cowbirds, Blackbirds and Grackles during the fall and winter months, and soon spread over Mercer, Burlington, Camden and Gloucester counties, N. J., Bucks and Philadelphia counties, Pa. It is recorded on the Jersey coast as far south as Cape May in 1909, two years earlier than at Salem on the Delaware.

Although it was reported in Philadelphia county as early as

November, 1907, it required several years to become thoroughly established before it penetrated inland. On January 5, 1911, a flock was reported in the Chester valley, between Berwyn and Valley Forge, feeding in the meadows with the Crows; by February 2 large scattered flocks of from 50 to 150 birds appeared and a male was secured for identification and I value it highly as probably the first capture in Chester county. During the following spring the birds dispersed through the valley, nesting as far west as Bacton to my knowledge. Chester valley, for its entire length of thirty miles, is enclosed by wooded hills of no considerable height; nevertheless, since this bird appears to be more of a lover of the open country, it presented a sufficient barrier to prevent an immediate invasion; and the Wayne, Devon, Berwyn and Paoli contingent arrived with the Grackles via the Darby creek route in 1912, and a year later had become perfect pests to some of the suburban residents.

The few Starlings that eventually penetrated the valley hills north of Berwyn, came up the branches of Trout run and established themselves at the heads of the ravines in 1913 and 1914; and when I first heard the throaty, chattering song attempts of a male in the shrubbery of my home, I knew that our local subjugation had been accomplished, since the advance from different quarters were about to be reunited.

Since the Starling appears to travel during the colder months, following the lines of least resistance, it is likely to penetrate far into the South under the guidance of allied species long before it invades the West. Its advance westward will doubtless be slow until the tributaries of the Mississippi are reached, when it is apt to be rapid, especially in the more open country.

Berwyn, Pa. FRANK L. BURNS.

WHITE PELICANS KILLED AT SIOUX CITY, IOWA.

A flock of White Pelicans of considerable numbers was observed in the vicinity of McCook lake, in South Dakota, near Sioux City, and of Crystal lake, in Nebraska, during the latter part of September, 1914. The flock was first reported on September 18 by Mr. F. T. Crum, an employe of the Sioux City Journal, who, while fishing at the mouth of the Big Sioux river on that date, observed the birds in flight. They had been on a sandbar in the Missouri river near the mouth of the Big Sioux. He estimated their number at about 200. A flock of about this size was observed by several persons in the same general locality over a period of a week or more.

The Emerson (Nebraska) Enterprise of September 24, 1914, published the following:

"While going to Sioux City Sunday morning with his family, the editor saw several hundred Pelicans soaring over South Sioux City. We returned home by the way of Jackson. Between Jackson and South Sioux City the highway was strewn with dead Pelicans. They had evidently soared low and killed themselves by flying into the telephone wires."

Mr. Ira Waddell, a farmer living near the northwestern end of Crystal lake, in Nebraska, across the Missouri river from Sioux City, Ia., informed Mr. George Ludcke, of Sioux City, a hunter who has a hunting lodge at McCook lake, that during the week beginning Septembem 20 he saw a number of dead White Pelicans along the road between South Sioux City and his home. He estimated that he probably saw seventeen or eighteen of the birds. He assumed that the birds had been shot and thrown aside, although he made no examination to ascertain the manner of their death. The country in the vicinity is wooded. There are no telephone or other wires along the road which could have caused the death of the Pelicans by accident, Mr. Waddell stated. If there had been such wires, Mr. Waddell added, the trees would have prevented the birds from flying low enough to have been harmed by them.

Mr. Emmet C. Higgins, of Omaha, an inspector for the United States Biological Survey, under date of October 9, wrote to Dr. T. S. Palmer, of the United States Department of Agriculture at Washington, that he had investigated the death of these Pelicans and found death due to striking telephone wires in the vicinity of Dakota City, Nebraska. Mr. Higgins stated that about fifty birds in all had been killed, and that he found seventeen dead birds in a radius of two miles. The birds, Mr. Higgins said, seemed to have been killed on or about Sunday, October 4.

Mr. Higgins, in a letter to Prof. T. C. Stephens, of Morningside College, Sioux City, under date of October 16, stated that he had examined seventeen of the Pelicans found dead near Dakota City and had discovered no indications of gunshot wounds upon them. Mr. Higgins' conclusion was that the deaths were due to striking the telephone wires.

It is impossible for me, with the facts in hand, to reconcile the conflicting testimony as to how the Pelicans were killed. It is a common practice for a certain type of hunters in this vicinity, however, and has been for many years, to shoot these birds. These hunters make no concealment of this practice. The birds offer a good target, and that is sufficient for them. Generally the birds are left where shot, although an occasional specimen is brought to the city and mounted.

Sioux City, Ia., Nov. 18, 1914. A. F. ALLEN.

ATTENTION!

Museums, Educational Institutions and Collectors

I am prepared to mount or furnish mounted specimens of mammals, birds, reptiles and fish and to prepare or supply scientific skins and oological specimens.

Our life groups of the above are sought by those who recognize ability and accurateness of workmanship and the perfect condition of material furnished.

Descriptive matter relative to our methods, also references pertaining to our responsibility, will be furnished upon application.

Karl W. Kahmann

Work Rooms and Studio

2457 Lincoln Avenue, CHICAGO, ILL.

Glimpses of Wild Life

If you are in need of illustrations involving bird life or any of the vertebrates let me know your plans.

I have many unpublished sketches, drawings and paintings truly depicting the creatures of the air, land and water.

Poses and attitudes are characteristic of the species and should enhance the value of your articles.

KARL PLATH

Artist

3307 W. Congress St., Chicago, Ill.

Announcement

As I find it necessary to move my belongings to another locality, I'm endeavoring to make the task as light as possible. If any colleges, museums or individuals would be interested in acquiring certain specimens, I might arrange things to the mutual advantage of all parties concerned.

EDW. ARMSTRONG,
207 N. Michigan Ave. Chicago, Ill.

The Collectors' Journal

An illustrated monthly magazine devoted to collectors of postage stamps. The leading exponent of stamp collecting which no collector can afford to be without.

Subscription Price, 50c per year.
Sample Copy, 5c.

H. L. LINDQUIST, Editor and Publisher.
760 East 40th St., Chicago, Ill.

We operate our own printing plant and are in position to do high grade commercial and publication work at moderate prices. Write us about your next job.

The Wilson Lantern Slide and Photo Exchange

unexcelled in the making of lantern slides, plain or colored. We have achieved success at copying or enlarging pictures from prints or half-tones. Professoional developing and finishing for amateurs throughout the country. We tint photos. We photograph anything in nature which comes before our lens. The best results are always obtained from the original negative and the best substitute is a glossy print. Mr. Gerard Alan Abbott uses our methods exclusively.

LANTERN SLIDES

Negative and slide, 75c and up.
Reduction from original negative, 50c.
Contract from original negative, 40c.
Professional coloring of slides, 50c to $1.50.

ENLARGEMENTS

Size	Black & White	Sepia	Size	Black & White	Sepia
5x7	40c	50c	11x14	1.25	1.50
6½x8½	60c	75c	14x17	1.50	2.00
8x10	75c	1.00	16x20	2.00	2.50
10x12	1.00	1.25			

Above prices are for enlargements from original negatives. Thirty-five cents extra is charged when a copy negative is made.

1302 Venetian Building, Chicago, Ill.

WILSON CLUB PUBLICATIONS

Consist of two Series, Old and New

THE OLD SERIES comprise the following issues:

Ornithologists' and Oologists' Semi-Annual, Vols. I and II, two numbers each, Vol. III, one number. (Only No. 1 of Vol. III is obtainable.) 50 cents.

Wilson Quarterly, Vol. IV, two numbers. Both out of print.

The Journal, two numbers. 10 cents a number.

THE NEW SERIES comprise the

Wilson Bulletin, from 1 to 90 inclusive. (Nos. 1, 2, 3, 4, 5, 6, 7, 8, 24, 28, are reprinted.)

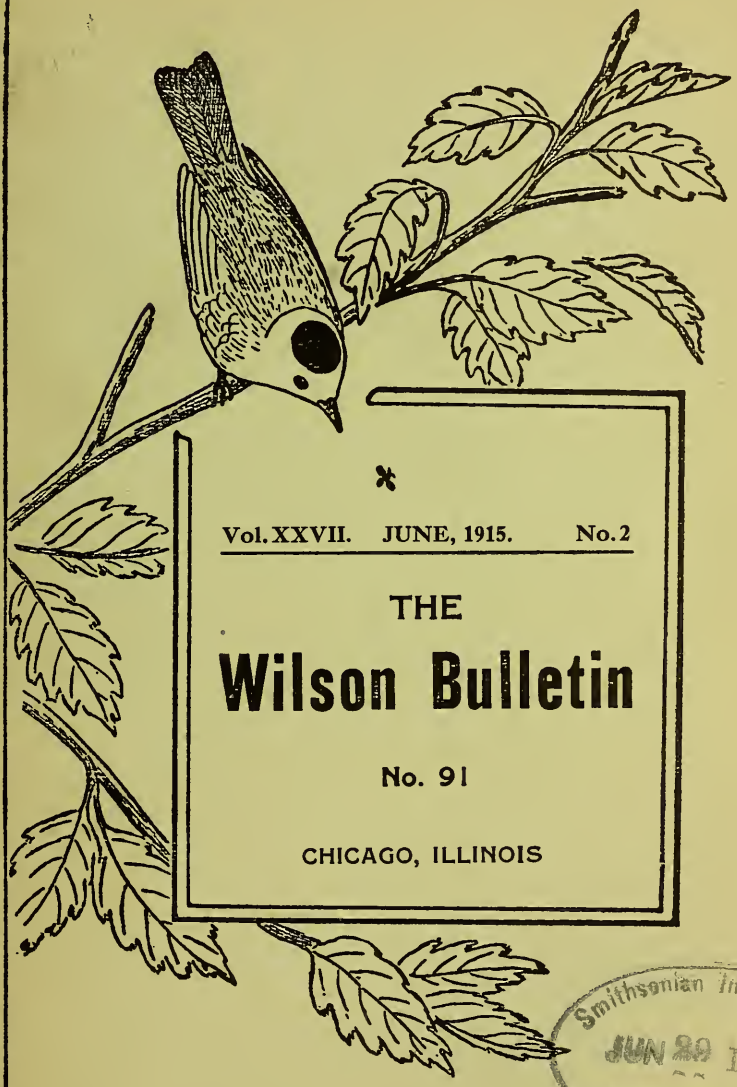
Of the Wilson Bulletins, No. 4 is a study of the Mniotiltidæ, 22 pages, by LYNDS JONES. Price 25 cents. No. 5, The American Crow, 41 pages. Price 50 cents. No. 15 is a study of "The Oberlin Grackle Roost," 18 pages, by LYNDS JONES. Price 25 cents. No. 30, "Warbler Songs," 56 pages, by LYNDS JONES, in which all North American Warblers are discussed, the songs of nearly all described, and a field key to the adult males given. Price $1.00. No. 31, "A Monograph of the Flicker," 82 pages, by FRANK L. BURNS. Price $1.00. No. 33, "A Summer Reconnoissance in the West," by LYNDS JONES and W. L. DAWSON, being a study in fourteen states during a journey of 7000 miles. Price 25 cents. No. 37, "A Sectional Bird Census," by FRANK L. BURNS. Price 50 cents. Nos. 76-77, "A MONOGRAPH OF THE BROAD-WINGED HAWK," 176 pages, by FRANK L. BURNS. Price $1.00.

The other numbers consist of "General Notes." Price 15 cents and 30 cents each. The whole New Series for $18.00.

Address all communications to

THE WILSON BULLETIN

SPEAR LABORATORY, - - - - - OBERLIN, OHIO



Vol. XXVII. JUNE, 1915. No. 2

THE
Wilson Bulletin

No. 91

CHICAGO, ILLINOIS

Smithsonian Instit
JUN 29 191
National Museu

WILSON ORNITHOLOGICAL CLUB

CONTENTS

Notes on the Red-winged Blackbird	Ira N. Gabrielson	293
Notes from the Laurentian Hills	L. McI. Terrill	302
Birds of Essex County, New Jersey	Louis S. Kohler	309
Tame Red-breasted Nuthatch	Harriet Kinsley	313
The Fearless White-eyed Vireo	Aretas A. Saunders	316
Birds of Clay County, South Dakota	S. S. Visher	321
Wilson Ornithological Club Meeting		335
The April First Bird Census		337
Editorial		338
Correspondence		339
Field Notes		348

THE WILSON BULLETIN

is published on the fifteenth of March, June, September, and December, by the Wilson Ornithological Club at Chicago, Ill., edited by Lynds Jones, Oberlin, Ohio.

Subscription: One Dollar a year, including postage, *strictly in advance.* Single numbers, 30 cents, unless they are "Special" numbers, when a special price is fixed. The Bulletin, including all "Special" numbers, is sent to all paid up members, either Active or Associate, after their election, it being understood that one dollar out of the annual dues paid by members is for the Bulletin.

Subscriptions may be addressed to P. B. Coffin, 3232 Groveland Avenue, Chicago, Ill.

Advertisements should be addressed to The Wilson Bulletin, 943 Marquette Bldg., Chicago, Ill. Terms will made known upon application.

All articles and communications intended for publication, and all publications and books for review, should be addressed to Lynds Jones, Oberlin, Ohio.

Articles of general interest relating to bird life are solicited. They should be in the hands of the editor not later than the fifteenth of the month preceding publication.

Authors of articles, other than "Field Notes," or short items of a general nature, will receive 25 bound reprints free of charge. Additional bound reprints of articles comprising 16 pages or less may be had at the following rates: 25 additional copies, $1.50; 50 additional copies, $2.00; 75 additional copies, $2.50.

Entered as Second Class Matter, May 21, 1914, at the Postoffice at Chicago, Ill., under the Act of March 3, 1879.

THE WILSON BULLETIN

NO. 91.

A QUARTERLY JOURNAL OF ORNITHOLOGY

VOL. XXXVII JUNE, 1915 NO. 2

OLD SERIES VOL. XXVII. NEW SERIES VOL. XXII.

NOTES ON THE RED-WINGED BLACKBIRD.

BY IRA N. GABRIELSON.

Just back of Riverview Cemetery at Marshalltown, Iowa, there lies a low, flat pasture through which flows the Iowa River. An old channel of the river winds up behind the cemetery in a long loop and is filled much of the time with stagnant water. Along the banks of the small pond thus formed is a narrow growth of willows with a dense growth of smartweed and nettles between them and the water's edge. Back of the willows is a sparse stand of such trees as elm, soft maple, ash, and box elder.

To this locality my interest was strongly attracted during May by a little band of five pair of Red-winged Blackbirds, *Agelaius phoeniceus phoeniceus*, which seemed inclined to settle there for the summer. They remained through the first half of May and on the nineteenth I found two partially completed nests. May 30 the willows were searched and four nests were found. These contained four, three, one, and no eggs respectively. All were built in small willows from three to six feet from the ground. The last two had been disturbed by small boys as tracks were visible in the soft earth and the bent and broken branches of each tree testified to the attempt to climb it.

The Red-wings were well started on the nesting season

when the very heavy rains of early June flooded the region and destroyed all of the nests. The fifth nest was not discovered until June 27 when on a close examination, a bit of supposed drift material lodged in a small tree was found to be a nest of this species filled with mud, leaves, and sticks. In the bottom two rotten eggs were found. The river remained high for only a few days but the water continued to flow through the old channel until June 25. This converted

Female Brooding.

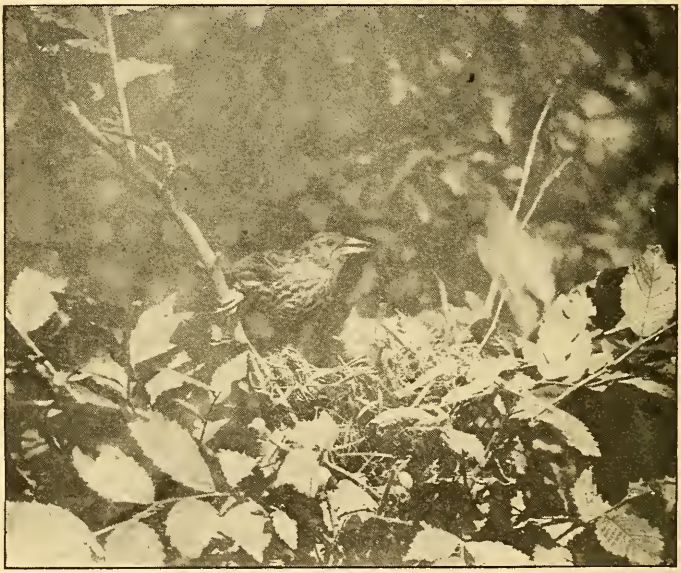
the region into an island and kept the small boys out. On June 25 I succeeded in crossing to this island and found that the Red-wings had used to good advantage the period of isolation. The old nests were filled with mud and leaves but there were also four new ones containing young just hatched. All of these nests were placed on slightly higher ground than the preceding ones. All were very flimsy and resembled the nest of the Grosbeak more than the usual Red-wing type. One was placed in a willow about six feet from

the ground and contained two nestlings and two eggs. This pair after many trials succeeded in raising all four of their brood. The nest was close to a wagon track leading to a sand pump on the river and the passing of the wagons kept them in a constant state of alarm. The second was placed in a small elm and the four nestlings it contained were successfully reared. The third, in a willow, held one naked young which disappeared the next day. The fourth, containing three nestlings, was chosen for special study. All three nestlings failed to reach the fledgling stage. The fifth pair placed their nest in a dense tangle of willows and vines, thickly grown with nettles (*Urtica sp?*). The growth was so dense that, although I worked my way through the thicket several times, I did not find the nest. These five pairs of Red-wings thus built ten nests and from the nine which were found only eight young were finally brought to a fledgling state. This seems to be an unusually low percentage of increase, at least in my experience.

Approaching with Food.

On the same date (June 25) I found a Rose-breasted Grosbeak's nest and while watching it our attention was drawn to Red-wing nest number four and we erected a blind with the idea of securing some photographs of the parents. While engaged in this we became so interested in the blackbirds that we spent some time watching them. My wife and I did all of the work.

The nest was built in a small elm about two feet from the



Female Alarmed by a Whistle from the Blind.

ground. It was carelessly and coarsely woven and was so thin one could see thru the sides. It was left undisturbed except that enough branches and leaves were removed to allow photographs to be taken. An ordinary umbrella blind was erected at the nest on the afternoon of June 29. The bird was unusually shy and it was not until noon of the thirtieth that we thought it wise to enter the blind. We could watch her actions from the Grosbeak's nest and thus determine the

time at which she became reconciled to the blind. The nestlings were painted with water colors we had been using on lantern slides. Ordinary water colors had been previously tried without much success but the results obtained with these were fairly satisfactory. One of the nestlings had his beak colored a bright red, the second, green, and the third was left a normal color. The startling contrasts in the beaks made it easy to determine which nestling received the food. We spent the afternoon of the thirtieth and all day July 1 watching this nest. We returned on the morning of the second to find a sad state of affairs. One nestling had entirely disappeared, a second was in the nest in a dying condition, and a single torn bloody wing on the ground beneath the nest testified to the fate of the third. The ground about the nest had been trampled hard by our movements in erecting the blind and, although we searched carefully, we could find no evidence betraying the identity of the marauder.

BROODING.

Although this bird apparently never recovered from the fear of the blind the brooding instinct was very strongly developed. On every approach to the nest she uttered continually a single syllabled note of alarm. This note had a harsh metallic ring and has been represented by the word "tchéck." It was accompanied by a jerking of the tail and quick motions of the head from side to side. On leaving the nest she invariably gave a call of several syllables. This call was very peculiar and difficult of description. In spite of her manifest uneasiness at the presence of the blind she spent most of the time, while the sun shone on the nest, in brooding. The position of the blind and the surrounding vegetation exposed the nest to the sun from 8:30 to 10:10 while it was shaded during the remainder of the day. On July 1, the day on which we watched during this period, she spent fifty minutes or exactly one half the time in shading the young while not a minute was so spent at any other time of the day. In shading the young she always assumed the same position with

her head toward the sun and broadside to the blind. One foot was placed on each side of the nest, the beak held wide open, the wings half spread and slightly drooping, and the feathers of the head and back elevated. This resulted in entirely shading the young and is the most perfect development of this brooding position yet noted in an individual bird. All passerine birds which I have watched make some attempt to assume a similar position but only a single one, a female Brown Thrasher, ever approached this Red-wing in the attempt. While on the nest she uttered incessantly the single syllabled alarm note and on leaving always added the other call.

FOOD.

TABLE I. FOOD OF NESTLINGS.

	NESTLING				
FOOD	A	B	C	UNKNOWN	TOTAL
Unidentified	16	7	12	..	35
Moth	7	8	2	2	19
Maybeetle	..	1	..	..	1
Beetle	5	1	..	..	6
Grasshopper	23	26	23	..	72
Spider	3	2	6	..	11
Mayfly	..	..	1	..	1
Measuring worm	2	4	1	..	7
Larvae	7	7	5	..	19
Frog	..	..	1	..	1
Daddy longlegs	1	..	2	..	3
Wire worm, etc	3	6	7	..	16
Cricket	1	..	3	..	4
Fly	..	2	..	..	2
Total	71	66	64	2	203

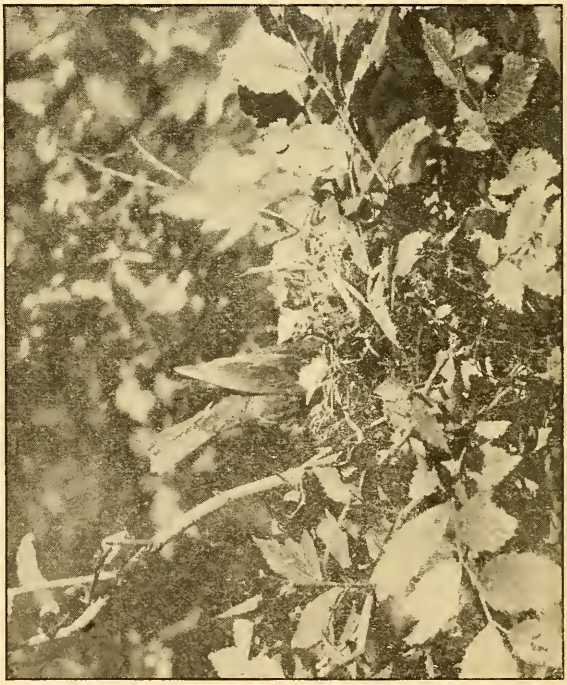
All feedings were by the female, the male never approaching the nest. The area from which this bird secured food was exceedingly limited. As stated before, the nest was in a small elm just in the edge of the timber which at this point

was from 15 to 20 feet from the edge of the water. Beginning at the water's edge and going towards the nest we found several more or less well defined areas of growth: first, in the edge of the water was a dense growth of arrow-head lilies (*Sagittaria sp?*) in a strip of six or eight feet in width; second, from three to five feet inland was a region of bare earth or a short growth of a sedge of an unknown species; third, a band of smartweed (*Polygonum sp?*); and lastly, a mixed

The Attitude of Inspection.

growth in which nettles (*Urtica sp?*) and burdock (*Arctium sp?*) predominated. This growth touched the nest on one side and on the other was the willow belt. The Red-wing confined her hunting as far as we could determine to the weed growth and particularly to the smartweed and burdock. We never saw her enter the willow thicket to hunt but always found her along the water's edge or in the weeds. The ground was damp and sticky and the region furnished good foraging. Grasshoppers were by far the most abundant forms and the Red-wing took advantage of the fact. Many

of them were of large size and she frequently brought them so large the nestlings could not swallow them. When this happened she crushed them in her beak until they could be devoured. Next to grasshoppers, moths were the most abundant. The majority of those brought were small, dull colored ones but occasionally a large grey or dull white one was seen. Spiders were also common and the most of those



Searching for Excrement.

fed were caught along the shore in the bits of drift wood. Altogether during the 170 feeding visits she brought 203 morsels of food. Of these, grasshoppers were 34.97%, moths 9.37%, larvae 9.35%, unidentified 17.24%, and the remaining 29.09% was composed of various insects. The unidentified were mostly small insects captured among the arrowhead lilies but we could not identify them. A very small frog was

fed on one visit. As far as numbers were concerned the distribution of food to the nestlings was very equal, A receiving 34.97% of the insects fed, B, 32.51%, and C, 31.51%. It is not so easy to estimate the percentage by bulk on account of the varying sizes of the insects fed.

BEHAVIOR OF THE FEMALE.

When at the nest she was at all times alert and any slight sound caused her to raise her head and utter the alarm note. If the noise were continued she hopped nervously away from the nest but returned as soon as it ceased. Fig. 3 was taken just as she raised her head and gave the alarm note in response to a low whistle from the blind. If not disturbed she usually critically inspected the nest after feeding. This position is shown in Fig. 4. In the majority of visits she left after this inspection but whenever she saw anything in the nest which needed attention she dived head foremost among the nestlings (Fig. 5) and probed vigorously. Occasionally this probing was so violent as to shake the whole tree and shove the young out of the nest. Once during this process one of the nestlings was lifted up, thrown over the edge of the nest, and would have fallen to the ground had she not seized him by the leg and pulled him back.

In no instance during the study was the excreta devoured but it was always carried away.

She had a stereotyped method of approaching and leaving the nest. To reach it she flew to a small willow on the opposite side of the nest tree and then hopped to the nest. In leaving she invariably flew straight toward the blind and swung to the left as soon as she was out of the tree.

BEHAVIOR OF THE MALE.

The male was never seen at the nest, but spent his time in the top of a tall willow just behind the blind. While here he often dashed out and snapped up a passing insect in approved flycatcher manner. He spent much time with his wings slightly spread to show the crimson shoulder and singing his "con-qua-ree." The only time he exhibited any interest in

his family was when we approached the blind or at the presence of some other bird. When we came near the blind, he swung out over our heads uttering the whistling note which Nehrling renders "Tii-tii." He ceased this as soon as we disappeared in the blind and resumed his song.

In his relations with his bird neighbors he was far from being friendly. His nearest neighbor was a Rose-breasted Grosbeak which had a nest not twenty-five feet from that of the Red-wing. When not engaged in fighting away other birds, the two males spent much time in fighting each other with the Grosbeak generally victorious. On one occasion a Bronzed Grackle alighted in a willow between the two nests and both males flew at him driving him out of the vicinity. A Catbird and Brown Thrasher had both raised families a short distance away and the young were just out of the nest. Hardly a minute of the day passed but what one could hear the squalling of one of these and the cries of the Red-wing as he drove them away. On the morning when we returned to find the nest destroyed, he was still on guard as bravely and as conspicuously as ever and seemingly undisturbed by the tragedy in his family.

NOTES FROM THE LAURENTIAN HILLS.

YELLOW-BELLIED FLYCATCHER, GOLDEN-CROWNED KINGLET, AND BLACKBURNIAN WARBLER.

BY L. MCI. TERRILL.

Exploring in the Laurentians has all the fascination of fishing for me; one never knows what to expect at the turn of the road, and the road turns often. Though fire has raged in many sections, the rocky and broken nature of the country prevents a continuous burning.

Most uninviting vistas change abruptly; one climbs a burnt hillside — gray boulders and charred stumps peeping through a dense undergrowth of Bracken and Raspberry vines — sur-

mounts the bare rock at the summit and passing through a fringe of evergreens on the downward slope, halts abruptly to gaze on a lakelet set in a dense carpet of Sphagnum moss. The innumerable hollows all have their lakes or brooks. If you are thirsty, the ditch by the roadside usually affords the clearest of spring water. Late in the afternoon of June 29, 1913, having a little leisure before train time, I thought to see what lay beyond the turn of the road in a hitherto unexplored direction. A short walk from St. Margaret, Terrebonne County, brought me to a stream which led into a small Sphagnum bog. Hearing the rather distant "Tree-deer" of an Olive-sided Flycatcher I started toward some small-growth Tamarack and Spruce trees fringing the open bog, and as I entered their shade a small bird darted out at my feet. The nest, sunk in a hollow in the side of a mound of moss, held four eggs well advanced in incubation.

Thinking it to belong to one of the rarer Warblers I awaited the owner's return, but with the short time at my disposal had to leave unsatisfied. On June 20, 1914, I revisited this bog and after considerable search flushed a bird from a nest containing four similarly marked eggs. This was about fifty yards distant from that of 1913 and possibly belonged to the same pair of birds. I had heard the notes of the Yellow-bellied Flycatcher [*Empidonax flaviventris*] on each visit to this district but did not associate it with either nest found, until the birds put in an appearance in the latter instance. Owing to the ventriloquial quality in the voice of this Flycatcher it was some time before I discovered the bird, probably the female, perched on a branch two feet from the ground. Its alarm was sharper and more abruptly ended than the call notes, sounding somewhat like the syllables "pee-wheep"; the first note suggesting the Wood Peewee and the latter the Alder Flycatcher. The last note commenced with a rolling and ended with a grating sound, as if the bird had snapped off the sound by suddenly closing its mandibles, accompanied by a tail and bodily twitching that indicated considerable effort.

Hearing the usual call notes one would not suspect much effort, in fact, their ordinary notes, "peeh-peeh," the latter slightly accented and prolonged, have none of the explosiveness of "alnorum," but are peculiarly soft, drowsy, and effortless. Remaining as motionless as possible under the incessant attacks of "Black Flies" I soon heard the other bird answering its mate, and both shortly appeared overhead, a few feet distant, where they displayed mannerisms in movement very similar to the Wood Pewee. The nest was built in the hollow of a small mound, beneath the moss-covered, protruding portion of a root, under deep shade of young Black Spruce, Tamarack, and deciduous shrubs, with a tangle of Alders in the immediate foreground, facing the open bog. On the other side the growth was larger and became almost entirely deciduous, mostly Black Birch, where the basin of the bog terminated in the boulder-strewn base of surrounding hills. The nest found in 1913, which I am reasonably certain belonged to this species, was in a more open situation on the extreme edge of the small growth, in one of many mounds of moss bordering a hare-runway — almost similarly situated as a nest of Nashville Warbler found nearby.

The exterior of nest number two had the rich brown color of leaf mold, being composed of particles of dead Sphagnum and other mosses, fine hair-like black rootlets, bits of decayed wood, and moldy leaves. The lining was mainly of soft bleached grasses and fine black rootlets. The entire structure was very loosely made with little attempt at weaving. Incubation had commenced in the eggs which at first sight resembled those of the Alder Flycatcher, but on comparison the ground color was found to be clear white against the rich cream of "Alnorum," and the light reddish markings, chiefly in a wreath about the larger end, were in distinct contrast to the darker rusty red and occasional deep madder brown spots of the Alder Flycatcher. They are also considerably smaller than those of alnorum, averaging .68x.53 of an inch. Other species found breeding in the same bog were: Yellow-throat, Myrtle, Magnolia, Nashville, and Blackburn-

ian Warblers; White-throated, and Chipping Sparrows, and Olive-backed Thrush; also, apparently nesting, Olive-sided Flycatcher, Swamp Sparrow, and Golden-crowned Kinglet. The Yellow-bellied Flycatcher is quite common in the district and having found only two nests leads me to suspect that the bird is a very light sitter — a trait highly developed in its near relation, the Alder Flycatcher.

Other members of the family are well represented in the district, i.e.;— the Kingbird, Wood Peewee, Olive-sided, and Alder Flycatchers, and less commonly Least, Crested, and Phoebe Flycatcher. Earlier on the same day, in another locality at St. Margaret, I found a nest of the Golden-crowned Kinglet (*Regulus satrapa satrapa*). It was quite by accident that my eyes became focused on a mass of green, slightly brighter than the surrounding Balsam foliage, and I experienced a thrill similar to the botanist, who, on finding the Yellow Ladies Slipper, felt as if he had discovered hidden gold.

At the same time I became aware of the faint, though deliberate. " dee-dee " of a Kinglet, differing from the usual call note " ti-ti." This was apparently the alarm note though with little expression of alarm or otherwise; in fact, so expressionless as to attract attention in time by its very monotony. There was no sign of the wren-like scolding of the " Ruby-crown " and the only indication of ownership was a slightly increased tempo as I approached closely, when the other bird slipped from the nest and joined its mate. The nest was pensile, being hung from the heavily-foliaged limb of a Balsam Spruce, two feet from its tip, ten from the trunk, and twelve from the ground.

At the point where the nest was built, numerous branchlets occurred, several of them being caught in the nesting material beneath and securely fastened with knots of spider's silk. The supporting limb, half an inch in diameter at the nest, with the foliage, completely concealed the entrance beneath. Externally, the nest was almost entirely composed of bright yellowish-green mosses, mainly of the Hypnaceae

family. A few lichens (no Usnea) adorned the exterior and numerous balls of reddish-brown spiders' silk held the material together. Within this cradle of moss was a layer of fur from the Hare, and lastly a substantial lining of small feathers, some of them curving upwards and over the entrance, while throughout the nest occasional feathers and hair were used in binding. The nest measured, in outside diameter, 4x3.60 inches; outside depth, 2.15; inside depth, 1.30, and entrance diameter, 1.35 inches.

Only six eggs had been deposited and as incubation had not commenced, the set was likely incomplete. Passing this spot on July 6, I heard the alarm notes of a "Golden-crown" and soon found another nest with one egg, twenty two feet from the ground and eight from the trunk, similarly constructed and situated in another heavily-foliaged Balsam Spruce, one hundred feet distant from the first nest, having likely been built by the same pair of birds.

These nest-trees were situated on a hillside that was formerly pasture-land but now mostly overgrown with Balsam Spruce.

In the many open spaces between these trees was an undergrowth of Brake Fern and Hazel. Both nest-trees faced such openings, where the luxuriant growth and wide-spreading basal branches of the Balsams gave a park-like appearance to the view. On the lower reaches of the hill, facing a trout brook which drained the lake above, the growth was much denser. On June 29, in this denser growth near the brook, were families of two near relatives of the Kinglet—the Winter, and House Wren. The latter had evidently led her young into the shade from adjacent stump-land. From the stream bank a Water-Thrush occasionally sang and I had a chance to compare its song with that of the House Wren. The ripping liquid quality of the Water-Thrush notes always remind me of the Wren, and although the song of the former is much clearer and sweeter, it has the same hurried finish.

On the opposing hill, in dense forest growth, I again heard the methodical "dee-dee" of the "Golden-crown," and found

a family of adults and young, the latter evidently several days out of the nest.

On June 21, 1914, I found another nest of this Kinglet built a few feet distant, on a limb adjacent to that in which the first nest was found in 1913. As I approached, the nine or ten young made their debut from the nest, the cavity being much enlarged and flattened by the crowding of the young as they could not possibly have been contained in the original space. Half a mile away, in a thicket bordering a Sphagnum bog, I saw another family on the wing, and hearing the species singing in two other localities, I concluded it to be a fairly common summer resident, and that two broods are sometimes raised in a season.

It might be interesting to compare nests of the Ruby-crowned Kinglet, from Newfoundland. Several nests found by Mr. W. J. Brown, near Bay of Islands, were semi-pensile, resting on limbs of stunted Spruce trees and fastened to twigs of overhanging branches, quite closely to the trunk and generally about five feet from the ground. They are all similar and have a brown appearance compared to the bright green of the "Golden-crown," being composed of a miscellaneous mass of Sphagnum and other mosses, particles of decayed wood, dead spruce needles, fine rootlets, Caribou hair, and Usnea lichens. The lining is of plant down and reddish rootlets, and beneath this is a thick bed of Caribou hair. The body of the nest is sewn in places with hair and bound with Usnea, especially about the rim. The eggs of the two species are similar.

While descending the hill where Kinglets were found on June 29, 1913, I took advantage of a runway leading through the denser growth and discovered a nest on an overhanging limb of a Balsam Spruce, twenty feet from the ground. On climbing the tree, the sitting bird, which I later found was a female Blackburnian Warbler (*Dendroica fusca*), flew to an adjoining tree where she preened her feathers and occasionally uttered faint chips of alarm. The nest held five slightly incubated eggs. There was little shyness indicated

by the bird's actions as she remained in the same tree during my twenty-minute stay, but I failed to get a glimpse of the male bird, except possibly in a meteoric flash. Several other Warblers congregated in the vicinity, particularly Magnolia and Myrtle, some of them protesting more vigorously than the Blackburnian. These Warblers were probably feeding young in the vicinity as I found most of this family thus engaged at this date. The dense forest second-growth in which the nest was located, on the hill slope, overlooking the brook, was practically devoid of undergrowth, the ground being carpeted with dead needles of conifers. The opposing hill was likewise densely wooded, the intervening valley-growth, mainly of Black Birch, Tamarack, and Black Spruce, terminating, half a mile distant, in the aforementioned Sphagnum bog. On July 13, in the dense growth of Tamarack and Black Spruce encircling this bog, another nest of this species was found in the top of a slender Tamarack, fifteen feet from the ground, resting on a dense cluster of twigs. The female was sitting on three eggs in which incubation had advanced six or seven days. This bird acted as in the previous case and the male was very timid, being seen only once at some distance.

Both nests were similarly constructed, though that of July 13 was slighter, probably owing to the situation. The other nest was well out on the limb, about four feet from the trunk, and was supported by a few branchlets. The composition was mainly of fine dead lichen-covered twigs of Spruce and Tamarack, with a small quantity of Usnea interlarded, being held together externally in a few places with balls of spiders' silk. A small quantity of Usnea and black hair-like rootlets composed the lining. The nests are quite distinct from those of other Warblers that I have examined; differing from the Magnolias in having a preponderance of spruce twigs and no grasses; and from the Myrtles in the slighter construction and lack of feather lining. They differ in greater degree with nests of all other Warblers examined.

The eggs have some of the characteristics of those of the

Yellow Warbler, particularly in the bluish-white or pale bluish-gray ground color. The set of five has faint under-shell markings of lavender, overlaid with a heavy wreath of rufous-brown at the larger end. The other set has more distinct spots of lavender, rufous-brown, and blackish. The first set average .66x.51; the other .65x,53 of an inch. The nest measurements are:—Outside diameter, 3.40; inside, 2:25; outside depth, 2.10; inside, 1.45 inches.

St. Lambert, Que.

CORRECTIONS AND ADDITIONS TO THE PRELIMINARY LIST OF THE BIRDS OF ESSEX COUNTY, NEW JERSEY.

BY LOUIS S. KOHLER

Since publishing my list of birds observed by me in the above named county in the Wilson Bulletin, Nos. 72-73, September-December 1910, numerous species have been added during the three years which have elapsed since that time which bring the total up to January 1, 1914 to one hundred and forty-six species.

In addition to these several additions, there were several omissions, viz.: (52) Vesper Sparrow, (64) Rose-breasted Grosbeak, (65) Indigo Bird, and (96) Wilson Warbler, notes on which species will be given in the appended list.

Also numerous corrections, which more extensive observations have proven most conclusively, that my former statements were not quite true conditions, are at this time taken care of, together with additional notes on some of the species which have undergone changes as regards their former status and present distribution.

OMISSIONS.

(52) *Pooecetes gramineus*—Vesper Sparrow. A common summer resident.

(64) *Zamelodia ludoviciana*—Rose-breasted Grosbeak. A rather common summer resident. Found nesting at numerous points throughout the county since 1904, but never with any regularity, as

the species in this section seems to be of a rather roving disposition, and where found some years is wanting the next.

(65) *Cyanospiza cyanea*—Indigo Bunting. Common summer resident. Nests in blackberry brambles in many parts of the county.

(96) *Wilsonia pusilla*—Wilson Warbler. A common migrant. Arrives May 12th to 19th.

ADDITIONS.

(119) *Colymbus auritus*—Horned Grebe. A pair of these birds appeared on the lake in Branch Brook Park, Newark, on April 23, 1911. This is the only time I have found them within the county limits, but just without, in Passaic and Morris counties, I have ten different records for the species during the spring and fall migrations, and it is fair to assume that the species visits us more than my observations would indicate.

(120) *Anas obscura rubripes*—Red-legged Black Duck. First observed on September 14th at Pine Brook on the Great Piece Meadows and on November 4th, three, one male and two females, were shot by several local hunters in this section, all of which were members of this subspecies. These records were all made during 1913.

(121) *Nettion carolinensis*—Green-winged Teal. A rather common migrant. The first specimen which came to my attention was a male which had been shot on November 4th, 1913, at Pine Brook. Later, on November 15th, seven more were examined in this section, four males and three females. During the spring of 1911 four birds were observed here, which appeared to be this species, and on November 2, 1912, another bird was found dead just across the Passaic River, in Morris county.

(122) *Querquedula discors*—Blue-winged Teal. Two males were observed at Beaufort on September 14, 1913. The only record I have for the county.

(123) *Aythya americana*—Redhead. One male observed at close range on September 14, 1913, at Pine Brook. The only record for the county.

(124) *Botaurus lentiginosus*—Bittern. This species was first recorded during June, 1912, when individual males were observed on Newark Meadows, near the Plank Road bridge, on the 21st, 24th and 25th. Apparently this same bird was seen on the 2d and 3d of July, 1912, in this same locality. On the 3d of July, 1913, a single female was seen here. These constitute the only records for the county.

(125) *Ardea herodias*—Great Blue Heron. Rather common migrant and visitant. On June 20, 1912, a male of this species ap-

peared on the park lake in Branch Brook Park and was about throughout the day. On May 11, 1913, a male was observed at Pine Brook. On September 6, 1913, five were seen migrating south over Newark Meadows, near Plank Road bridge, during the early morning.

(126) *Nycticorax nycticorax naevius*—Black-crowned Night Heron. A rather rare visitant. Observed in Branch Brook Park on May 11, 1912. Only record for county.

(127) *Porzana carolina*—Sora. One male observed at Pine Brook on September 14, 1913. Only record for county.

(128) *Gallinula galeata*—Florida Gallinule. One male found dead on Newark Meadows on September 6, 1913. Only record for county.

(129) *Actodromas minutilla*—Least Sandpiper. A rather common migrant. Observed first on May 10, 1912, when two were observed. On the 11th, 26th and 27th of May that year they were common on Newark Meadows. On August 12, 1912, twenty-five more were seen. On May 23, 1913, one male was observed, the only one for the year in this section.

(130) *Accipiter cooperi*—Cooper Hawk. An occasional visitant. First observed May 10, 1912, in Branch Brook Park. Since that time individuals have been observed at numerous places within the county.

(131) *Buteo lineatus*—Red-shouldered Hawk. A male of this species was shot by a local hunter at Pine Brook on November 5th, which is the first positive record that I have obtained for this county. Since then, on December 21st, a male was observed at close range from a blind at Bloomfield, feasting upon the remains of a field mouse.

(132) *Buteo platypterus*—Broad-winged Hawk. A rather common spring and fall migrant. Ocasional winter resident. First observed in Newark on November 4th, 1911, and since then individuals have been observed at different points within the county, but with no great regularity, as in the case of other of the *Buteonidæ*.

(133) *Falco peregrinus anatum*—Duck Hawk. First observed on Newark Meadows, near Plank Road bridge, on January 29, 1912. Later, February 20th and 24th, individuals were seen here. On December 31st, 1912, a male of this species was seen at Caldwell.

(134) *Falco columbarius*—Pigeon Hawk. First observed in Branch Brook Park, Newark, on May 11th, 1912. Since that time numerous individuals have been observed at numerous places within the county.

(135) *Pandion haliætus carolinensis*—Osprey. One of this species was observed at Silver Lake on September 2, 1911, the only record I have for the county.

(136) *Corvus ossifragus*—Fish Crow. Individuals of this species have appeared on different occasions on Newark Meadows since 1911, when it was first observed on August 12th, near the Plank Road bridge.

(137) *Spinus pinus*—Pine Siskin. An occasional winter visitant. Small flocks were observed first during the winter of 1911 in Branch Brook Park on December 5th and 19th. Since that time small flocks have been observed each winter here and in Montclair Heights near the normal school.

(138) *Progne subis*—Purple Martin. The first record for this county was made on the Newark Meadows on August 29th, 1912, when one of this species was observed flying over southward. Since then two other individuals were observed in Bloomfield on May 12th and at Caldwell on July 19th, 1913. Only record for county.

(139) *Lanius ludovicianus migrans* — Northern Loggerhead Shrike. Individuals of this species were observed at Silver Lake on August 23d, 1911, and one more on August 25th, 1911, in Branch Brook Park. These constitute the only records for the county.

(140) *Dendroica fusca*—Blackburnian Warbler. First observed in Bloomfield on September 11, 1911. During the spring migrations of 1912 and 1913 one male was observed each season. Only records for county.

(141) *Nannus hiemalis*—Winter Wren. Only one of this species has come to attention and this was a male in Branch Brook Park on October 29, 1913.

(142) *Cistothorus stellaris*—Short-billed Marsh Wren. Two individuals of this species were observed on Newark Meadows on May 2, 1913, the only records on my lists.

(143) *Sitta canadensis*—Red-breasted Nuthatch. A male of this species flew into the tannery near the Plank Road bridge on January 26, 1913, was immediately liberated on discovery. This is the only record I have of the species in this county.

(144) *Fringilla carduelis*—European Goldfinch. This beautiful exotic has been observed twice in Essex county, once on December 3d, 1911, at West Orange, and again on January 4th, 1913, at Caldwell.

(145) *Phasianus colchicus*—Ring-necked Pheasant. Common resident in the rural sections of the county.

(146) *Passer domesticus*—English Sparrow. An abundant permanent resident. Inadvertently left out of the former list.

CORRECTIONS.

Anas rubripes tristis—Black Duck. Since publishing the first list I have spent considerably more time on the Great Piece Meadows and my observations have proven conclusively that this species was and is far more common than was formerly suspected. Nests were found during the spring of 1911, 1912 and 1913, and during the fall migrations of these years myriads of these birds were to be flushed wherever you pushed your boat. Not near as common during the vernal migrations as during the autumnal.

Ammodramus savannarum australis—Grasshopper Sparrow. Observations since 1910 have proven my former remarks quite inadequate and at the present time may be considered a common summer resident, nesting in numerous places about the county.

Sturnus vulgaris—Starling. Have increased wonderfully in the last three or four years and are now as abundant as the *Passer domesticus* and nearly as much of a nuisance. By far the worst opponent of our domestic species. Have driven the Bluebird, House Wren and Flicker away from my home grounds and have established themselves in every available nook and cranny.

Anthus rubescens—Pipit. My statements regarding this species in the former list are without doubt wholly wrong and observations since 1910 have proven this species a common transient migrant always more abundant during the vernal than during the autumnal migrations.

Baeolophus bicolor—Observations since the former list have proven this species to be a common winter resident in the northern parts of the county in the neighborhood of the Passaic River and Great Piece Meadows.

January 1, 1914.

A CAMP-FIRE GIRL'S TAME RED-BREASTED NUTHATCH.

BY HARRIET KINSLEY.

The winter of 1912 was very cold and we had many birds visiting our feeding table, including chickadees, downy, hairy and red-bellied woodpeckers, juncoes, a pair of cardinals, blue jays and the white-breasted nuthatches.

One day my mother noticed another bird on the trunk of a tree in the yard. She had never seen one like it before.

A few days later she saw it again and pointed it out to me.

I noticed its colors, a bluish slate-colored back with black stripes running back above each eye and the breast tinged with rufous.

I looked this up in my bird book and found it to be a red-

Harriet Kinsley.

breasted nuthatch. He seemed to be alone, as we never saw any other with him.

Being a very cold winter we felt sorry for the little fellow He seemed very tame, as we could get much closer to him than any of the other birds. His favorite food was nut meats, and fortunately we had gathered a quantity of nuts that fall. He even had a choice in the meats as he preferred butternuts.

One day he took a walnut by mistake, but dropped it before he had gone very far, and scolded us for tricking him.

He took it for granted that he was the sole owner of the feeding table and it took a great deal of his time trying to keep the other birds away. One day my mother thought she would put a nut meat on her hand and see how near he would come to it. He wanted the nut very much, but was a little shy about coming down to get it; he scolded, cocking his head first on one side and then on the other. The temptation was too great; he would risk his life; he made a swoop, lighting on her hand, and away he went with the nut. The next day we all tried the same thing and found he would take them after a great deal of scolding. We fed him every day and he gradually grew less timid.

We called him "Hatchie," and when we had a nut for him and he was not in sight we would call, "Come, Hatchie," several times and most always he would come, knowing what was in store for him.

He also got the habit of lighting on the top of a screen door, which was open, and in this way he could look in through the kitchen window; here he would sit and wait until we would feed him.

Sometimes when he had plenty to eat he would hide the nuts under the bark of trees.

He finally got so tame that he would come to any of the windows and wait patiently for a nut. We had to keep little piles of nuts by several of the windows so we would not have to go so far. Several times he perched on the window sill when we were upstairs.

We grew to think a great deal of the little fellow and were afraid he would leave us when it got warmer, and this was true. As the weather grew warm in the spring and the other winter birds went north, he left us. We missed him the first day of April. At first we thought it was an April fool trick, but it was not. He had left us for good, as we have never seen him since.

McGregor, Iowa.

THE FEARLESS WHITE-EYED VIREO.

BY ARETAS A. SAUNDERS.

The White-eyed Vireo (*Vireo griseus griseus*), when nesting and coming in contact with man, is one of the most fearless birds that we have. Perhaps I might have written one of the tamest birds, for that is the way many people would express it. But the bird does not show the confiding familiarity with man that such birds as the Chickadee and Chipping Sparrow show and thus could not properly be called

White-Eyed Vireo Defending Its Nest.

tame. It keeps away from man, seeking out the wildest tangle of green-brier thickets for its habitat and nest. It is only when man seeks it out, and finds the secret of its nest that it becomes at all "tame," and such tameness is better called fearlessness.

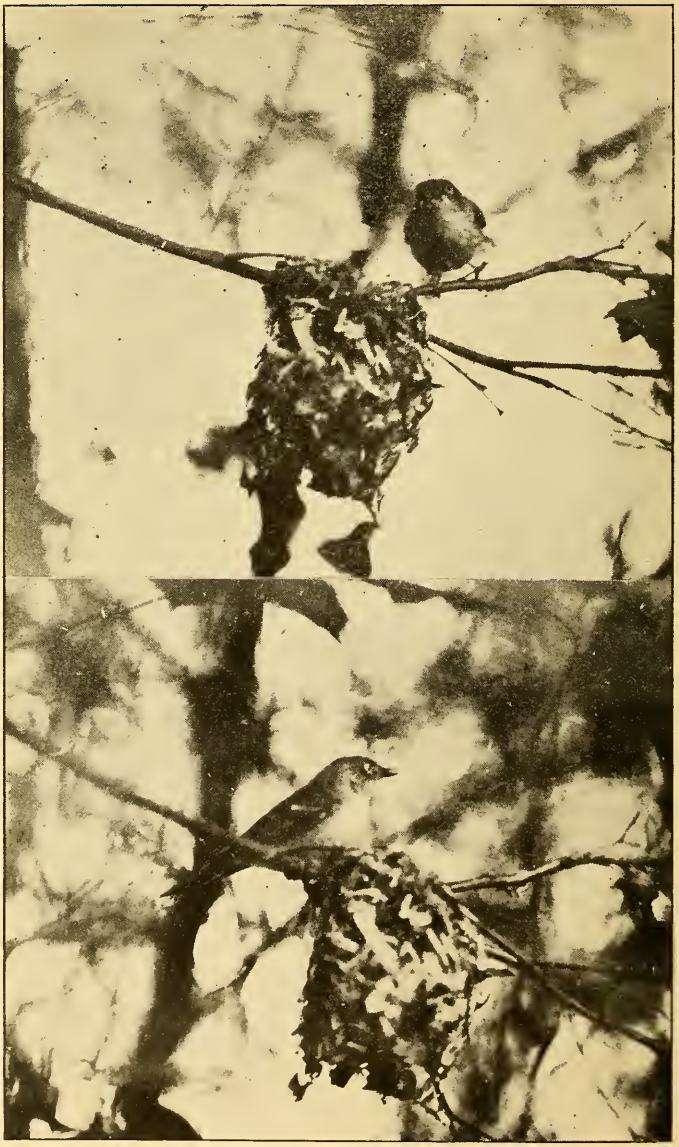
On the 27th day of May, 1914, while hunting birds and

bird nests in the vicinity of West Haven, Conn., it happened that I came upon one of the most fearless individuals of this fearless race. I pushed my way through a thicket of green-brier vines, and there in a little open space, on a drooping branch of a white birch that grew among the green-briers, sat a Vireo not three feet from my eyes, gazing down into its nest, and blinking the clear white eye that instantly told its species. The nest didn't look quite finished. The bird was not on it, but above it, so not wishing the disappointment of a deserted nest I didn't press my acquaintance further, but withdrew, to return later when the home was more firmly established.

My next visit was made the morning of May 29. The bird was on the nest this time and showed no disposition to leave until I had almost touched it. The nest contained three eggs. The bird did not go far, but remained in the bushes not two feet away and sang the short impetuous song repeatedly. From this fact I decided that either the female was a singer, or else the male shared in the duties of incubation. As soon as I had ceased my examination, and before I was out of sight, the bird returned to the nest and settled down to incubation again.

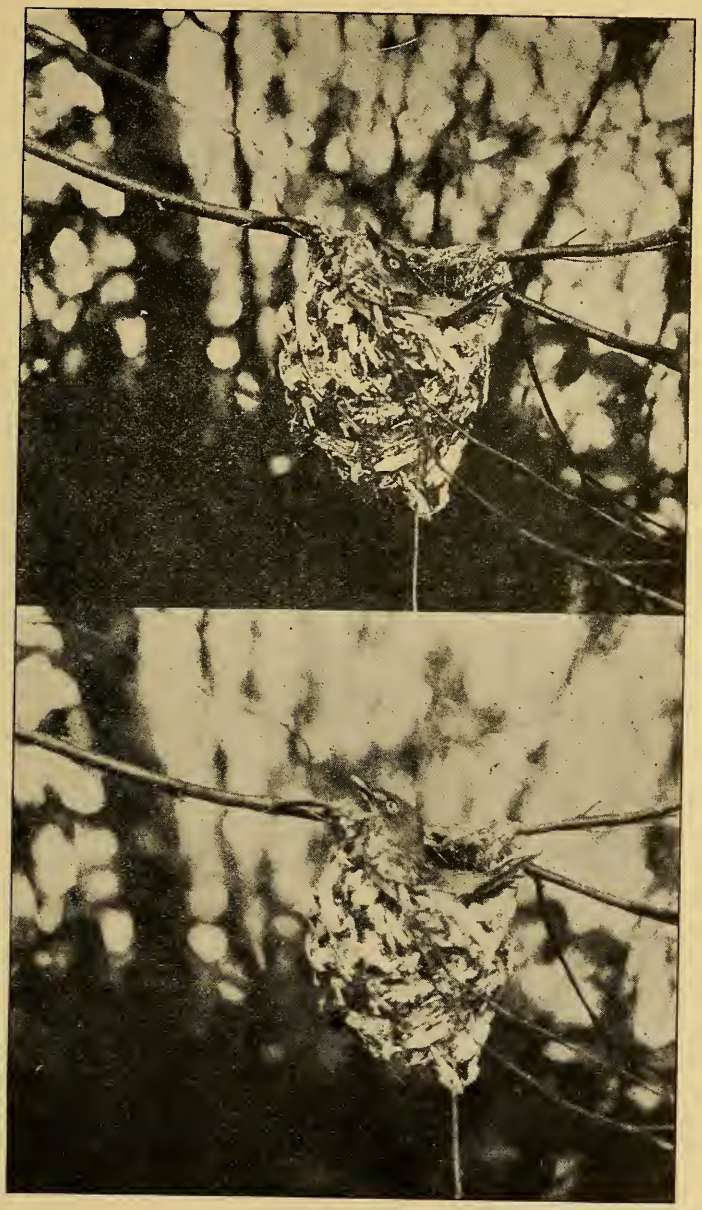
On June 1 I again visited the nest with a camera with which to secure pictures of the sitting bird. The nest now contained four eggs, the last having probably been laid on the morning of May 30, or possibly May 31. The pictures were easily taken, the bird sitting so still that long time exposures proved successful. The bird seemed more fearless than before, and only left the nest when I touched it, returning as soon as my hand was removed. When off the nest the bird sang repeatedly. Just why it should sing under such conditions is hard to say, but it was easy to imagine that the emphatic song was one of defiance to the disturber of its home.

It was during this visit that I first saw the mate of this bird and settled the question of sex. The other bird protested with a low, harsh scolding note, but no song. It would



White-Eyed Vireo and Nest.

Upper by Dwight B. Pangburn. Lower by A. A. Saunders.



White-Eyed Vireo on Nest.
Upper—Natural Pose. Lower—Head Erected as it Watches Hand Approaching the Nest.

not come near the nest while I was around. It was evident, and this was more thoroughly confirmed by further observation, that my singer was the male, and that both sexes shared in the duty of incubation.

The two birds showed marked individuality in the matter of fearlessness, the male being much more so than his mate. With some other birds, notably the Rose-breasted Grosbeak and the Marsh Hawk, numerous observations have convinced me that the male is frequently, if not always more fearless in defense of the home than his mate. On the other hand, in the case of the Bluebird, my observations go to show that either sex of a pair may be the more fearless individual. Which is the case with the White-eyed Vireo is a question which will take more observations to determine. The condition in which the male is always the more fearless would seem to be the natural result of evolutionary processes, which would tend to keep the female from harm, and thus insure the successful rearing of the young, even though the male should come to grief in the midst of his defense.

Frequent visits to the nest found sometimes one bird and sometimes the other incubating. The female always left the nest when I was several feet away and scolded me from a distant point in the thicket. The scolding usually brought her mate to the vicinity, and he never failed to take up his position on the eggs immediately unless my hand was actually on the nest. As time went on his courage increased until he would actually peck at my fingers before leaving.

On June 6, I visited the nest, accompanied by my friend, Mr. D. B. Pangburn. We took with us a reflex camera with which to try for more pictures of the bird. I had plenty of good pictures of the bird sitting on the nest, but wished a few of it when sitting in the bushes above or near the nest. On this occasion the bird pecked vigorously at our fingers, and absolutely refused to oblige us by getting off. We finally had to remove him forcibly. He showed such resistance to this that we could do it in no way except to grasp him by the bill and thus lift him off. In spite of this rather rough hand-

ling the little bird returned to the nest so promptly that the first few times the camera could not be adjusted and ready for him until he was seated again. We were unable to get the pictures we wished until we arranged it so that one of us got the camera ready while the other evicted the bird.

I made many trips to the nest after this, watching for the time that the eggs should hatch. I was planning to leave the vicinity for the summer soon, and hoped for studies and pictures of the feeding of the young before I went. The period of incubation proved so long that I began to fear that something had happened to prevent the eggs from hatching. On June 13 the nest still contained eggs. On this date the nest was visited by several members of the New Haven Bird Club, and all of them experienced the novel sensation of allowing the sitting bird to peck their fingers. It was on this occasion that I obtained a photograph of this act, one of the ladies allowing her hand to be photographed as the bird pecked at her fingers.

Early on the next morning, June 14, I found that the eggs had finally hatched. It was too late for me to get the studies of the feeding I had desired, but just in time for a note on the period of incubation. Assuming that the last egg was laid on May 30, which was most probable, the period of incubation was fifteen days. This is a decidedly long period for so small a bird, and longer than that of any other bird of its size with which I am acquainted.

A LIST OF THE BIRDS OF CLAY COUNTY, SOUTHEASTERN SOUTH DAKOTA.

BY S. S. VISHER, PH.D.

The location of Clay County on the Missouri River and crossed by the Vermilion River makes it a favorable area for the study of birds, there probably being a greater variety in this than in adjacent counties, while because the university is located here, more bird students have made extended ob-

servations within this than in any other South Dakota county. The first to carry on bird studies in this area was F .V. Hayden, the eminent geologist, who collected many birds "near the mouth of the Vermilion River" in May and June, 1854 and 1855. His records are included in Elliot Coues' classic "Birds of the Northwest" (Washington, 1872). C. S. Agersborg, in "The Auk" for 1885 gives a list of the birds of Southeastern Dakota. Of the 215 species included, most were observed in the vicinity of Vermilion, in or near which city Mr. Agersborg had lived for several years. During the past ten years, three students of the University of South Dakota have made some study of the birds. Benjamin Rowley and E. H. Sweet deserve special mention. Sheridan Jones also collected and mounted some specimens for the University Museum, but left no other record of his work.

The following list has been compiled in part from data furnished me by Rowley and Sweet, from Agersborg's artiticle, and Hayden's records, but it is chiefly the result of my observations in the area since 1908, especially 1910-13, while a member of the faculty of the University. With the help of a motorcycle, the more favored localities could be visited frequently, and much more effective work was possible than in the case of less fortunate observers. Careful records of the migration, abundance, and nesting of the birds seen were made for the U. S. Biological Survey, and numerous specimens were collected for the University Museum.

Clay County can be divided into five districts: (1) The Missouri bottom land; (2) The valley of the Vermilion River; (3) The bluffs along these valleys, the ravines of which are especially distinctive; (4) The nearly level upland or "prairie"; (5) The rough land of the northeastern corner of the county.

Most of the area is under cultivation. The chief exceptions are sand areas in the Missouri bottom, flooded areas (now however extensively drained by the recently completed "big ditch") in the Vermilion valley and the rough land along the bluffs. There are few small ponds on the upland level;

the one most frequently visited was "Rose Lake," situated some nine miles northeast of Vermilion.

The trees of the area are: (1) numerous planted groves of cottonwood, ash, elm, box-elder, plum, and maple; (2) native groves of the same species (except the maple) on the bottoms; (3) woods in the ravines where bur-oak, basswood, hackberry, and coffee-tree supplement the species just mentioned.

The more abundant birds nesting in the treeless portion of the upland are the Western Meadowlark, Marsh Hawk, Sennett's Nighthawk, Bobolink, Cowbird, Western Grasshopper Sparrow and Dickcissel.

The birds most frequently found nesting in upland groves are the Western Mourning Dove, Sparrow Hawk, Flicker, Red-headed Woodpecker, Kingbird, Least Flycatcher, Crow, Bronzed Grackle, Orchard Oriole, Baltimore Oriole, Goldfinch, Lark Sparrow, Chipping Sparrow, Rose-breasted Grosbeak, White-rumped Shrike, Yellow Warbler, Catbird, Western House Wren, Brown Thrasher, Robin.

In addition to those found in upland groves, the following nest commonly in the groves along the rivers: Western Red-tailed Hawk, Screech Owl, Black-billed and Yellow-billed Cuckoos, Hairy and Downy Woodpeckers, Blue Jay, Towhee and Cardinal. The more conspicuous birds of the city of Vermilion are the Bronzed Grackles, Rose-breasted Grosbeaks, Robin, Blue Jay, Chimney Swift, Western House Wren, Chickadee, White-breasted Nuthatch, Baltimore Oriole, Warbling Vireo, Wood Thrush, Wood Pewee and Purple Martin.

In the more densely wooded ravines, Wood Thrushes, Scarlet Tanagers, Screech Owls, Oven-birds, Wood Pewee and Indigo Bunting nest, while many migrants, especially warblers, stop here.

The water birds observed nowadays in this area are chiefly migrants, though many species formerly nested here. Among the water birds most frequently seen in summer may be mentioned: Pied-billed Grebe, Franklin Gull, Black Tern, Least

Tern, Blue-winged Teal, Shoveller, Pintail, American and Least Bittern, Sora Rail, Coot, Killdeer, Yellowhead and Thick-billed Redwing Blackbirds. Kingfishers and Green Heron nest frequently along the rivers.

LIST OF SPECIES.

Horned Grebe (*Colymbus auritus*).—A rare migrant.

Eared Grebe (*Colymbus nigricollis californicus*).—A rare summer resident. Common in migrations.

Pied-billed Grebe (*Podilymbus podiceps*).—Breeds commonly.

Loon (*Gavia immer*).—A rare migrant. There is a mounted specimen, secured in the county, in the University museum.

Herring Gull (*Larus argentatus*).—A rare migrant.

Ring-billed Gull (*Larus delawarensis*).—A small number of these gulls are seen each spring and fall.

Franklin's Gull (*Larus franklini*).—Abundant during late spring and early fall. Also seen occasionally in summer.

Forster's Tern (*Sterna forsteri*).—Occasionally common during migrations.

Least Tern (*Sterna antillarum*).—This interesting bird has nested regularly for many years along the Vermilion River, near the town of Vermilion, and also at the mouth of the stream, a few miles away. Nests have been found on several occasions. The colonies are small, consisting of not more than seven or eight pairs.

Black Tern (*Hydrochelidon nigra surinamensis*).—A common migrant and locally an abundant nester.

Double-crested Cormorant (*Phalacrocorax auritus auritus*).—A tolerably common migrant. Agersborg states that they formerly bred here.

White Pelican (*Pelecanus erythrorhynchos*).—A frequent migrant, passing in large flocks during April and late September and October.

Merganser (*Mergus americanus*).—A rare migrant.

Red-breasted Merganser (*Mergus serrator*).—A rare migrant.

Hooded Merganser (*Lophodytes cucullatus*).—An irregular visitor. Sometimes probably breeds.

Mallard (*Anas platyrhynchos*).—A very abundant migrant, and a rare breeder. Remains until late in December, or even well on into January, if portions of the Missouri River continue open.

Black Duck (*Anas rubripes*).—A rare migrant; seen as late as early June.

Gadwal (*Chaulelasmus streperus*).—A common migrant.

Baldpate (*Mareca americana*).—Abundant during migrations and tolerably common in summer.

Green-winged Teal (*Nettion carolinensis*).—Abundant migrant.

Blue-winged Teal (*Querquedula discors*).—An abundant migrant and frequent summer resident. By far the most abundant duck during the summer. Breeds on ponds and on bayous of the river. Arrives late in April and leaves in October.

Cinnamon Teal (*Querquedula cyanoptera*).—A very rare migrant.

Shoveller (*Spatula clypeata*).—An abundant migrant. Arrives about April 1, but not conspicuously abundant until the middle of that month. Breeds regularly.

Pintail (*Dafila acuta*).—The Pintail, or "spike-tail," is the earliest duck. Until late in March it is the predominant species. It breeds here occasionally.

Hutchin's Goose (*Branta canadensis hutchinsi*).—A very common migrant.

Brant (*Branta bernicla glaucogastra*).—Occasional migrant.

Whistling Swan (*Olor columbianus*).—An occasional migrant. A "winged" bird was kept in captivity for several weeks in 1911 before it died.

Bittern (*Botaurus lentiginosus*).—An abundant breeder.

Least Bittern (*Ixobrychus exilis*).—Occasionally a tolerably common breeder.

Great Blue Heron (*Ardea herodias herodias*).—A common migrant and a rare breeder.

Green Heron (*Butorides virescens virescens*).—Nests fairly plentiful in summer along the rivers.

Black-crowned Night Heron (*Nycticorax nycticorax naevius*).—One or two heronies are within reach of this area for these birds are met with on Rose Lake frequently.

Whooping Crane (*Grus americana*).—A rare migrant

Sandhill Crane (*Grus mexicana*).—A tolerably common migrant.

King Rail (*Rallus elegans*).—A rare summer resident.

Virginia Rail (*Rallus virginianus*).—Abundant migrant and common breeder.

Sora (*Porzana carolina*).—An abundant breeder.

Florida Gallinule (*Gallinula galeata*).—An accidental visitor. One was taken by E. H. Sweet a short distance east of Vermilion about April 15, 1899.

Coot (*Fulica americana*).—An exceedingly abundant breeder.

Wood Duck (*Aix sponsa*).—A few wood ducks have been shot here during the past few years. Formerly they were common and nested.

Redhead (*Marila americana*).—An abundant migrant and a rare breeder.

Canvas-back (*Marila vallisneria*).—Occasionally a common migrant.

Scaup Duck (*Marila marila*).—A rare migrant.

Lesser Scaup Duck (*Marila affinis*).—An abundant migrant. Some remain well into June and may breed occasionally.

Ring-necked Duck (*Marila collaris*).—Somewhat rare as a migrant.

Golden-eye (*Clangula clangula americana*).—A rare migrant.

Buffle-head (*Charitonnetta albeola*).—An abundant migrant.

Ruddy Duck (*Erismatura jamaicensis*).—An uncommon visitant; occasionally breeds.

Snow Goose (*Chen hyperboreus hyperboreus*).—An abundant migrant.

Blue Goose (*Chen caerulescens*).—An occasional migrant. Several were seen early in April, 1911, and one was taken for the museum.

White-fronted Goose (*Anser albifrons gambeli*).—A fairly abundant migrant; seen as late as early in June during the past two seasons.

Canada Goose (*Branta canadensis canadensis*).—An abundant migrant. Reported by Agersborg as formerly a rare breeder. Remained about the air holes in the Missouri River until January during the past winter.

Northern Phalarope (*Lobipes lobatus*).—Rare migrant. A specimen taken by Sweet is in the museum.

Wilson's Phalarope (*Steganopus tricolor*).—An abundant migrant and rare breeder.

Avocet (*Recurvirostra americana*).—Reported by Agersborg and Sweet as a rare migrant.

Woodcock (*Philohela minor*).—Reported by Agersborg as a very rare breeder and by Sweet as a rare migrant. There is a specimen, secured in South Dakota, mounted in the museum.

Wilson's Snipe (*Gallinago delicata*).—An abundant migrant.

Long-billed Dowitcher (*Macrorhamphus griseus scolopaceus*).—A very common migrant.

Stilt Sandpiper (*Micropalama himantopus*).—A rare migrant.

Pectoral Sandpiper (*Pisobia maculata*).—A very common migrant.

White-rumped Sandpiper (*Pisobia fuscicollis*).—A common migrant.

Baird's Sandpiper (*Pisobia bairdi*).—A tolerably common migrant.

Least Sandpiper (*Pisobia minutilla*).—A common migrant.

Red-backed Sandpiper (*Pelidna alpina sakhalina*).—A tolerably common migrant. A male in full summer plumage seen May 19, 1912.

Semipalmated Sandpiper (*Ereunetes pusillus*).—A fairly common migrant.

Marbled Godwit (*Limosa fedoa*).—A rare visitor; formerly common.

Hudsonian Godwit (*Limosa haemastica*).—A rare but regular migrant.

Greater Yellow-legs (*Totanus melanoleucus*).—A common migrant.

Yellow-legs (*Totanus flavipes*).—A very common migrant.

Solitary Sandpiper (*Helodromas solitarius solitarius*).—A fairly common migrant. Absent in summer, only a short time in June.

Western Willet (*Catoptrophorus semipalmatus inornatus*).—A common migrant.

Upland Plover (*Bartramia longicauda*).—Tolerably frequent in summer.

Buff-breasted Sandpiper (*Tryngites subruficollis*).—"An abundant spring migrant," Agersborg. Seen only a few times.

Spotted Sandpiper (*Actitis macularius*).—A fairly common migrant.

Long-billed Curlew (*Numenius americanus*).—Reported by Agersborg as formerly a rare breeder. At present a very rare migrant.

Black-bellied Plover (*Squatarola squatarola*).—Occasionally a common migrant.

Golden Plover (*Charadrius dominicus dominicus*).—A rare spring migrant.

Killdeer (*Oxyechus vociferus*).—A very abundant summer resident; arriving before the middle of March and departing in November.

Semipalmated Plover (*Aegialitis semipalmata*).—A very common migrant.

Piping Plover (*Aegialitis meloda*).—A tolerably frequent migrant.

Ruddy Turnstone (*Arenaria interpres morinella*).—A small flock was seen on Rose Lake in May, 1912, and in May, 1913.

Bob-white (*Colinus virginianus virginianus*).—A fairly common resident.

Prairie Chicken (*Tympanuchus americanus americanus*).—An abundant winter visitant and rare nester.

Prairie Sharp-tailed Grouse (*Pediocetes phasianellus campestris*).—Irregular; abundant during some winters, while during others it is absent.

Wild Turkey (*Meleagris gallopavo silvestris*).

Passenger Pigeon (*Ectopistes migratorius*).—Both of these game birds were reported by Agersborg to be rare breeders here in the seventies.

Western Mourning Dove (*Zenaidura macroura marginella*).—An abundant summer resident. Sometimes remains until December.

Turkey Vulture (*Cathartes aura septentrionalis*).—Seldom seen; however it has been known to breed here.

Swallow-tailed Kite (*Elanoides forficatus*).—Accidental in summer. One collected near Vermilion, mounted by Rowley, now in the museum. Reported by Agersborg as an occasional visitor.

Marsh Hawk (*Circus hudsonius*).—Abundant from early in March till the coming of winter. Seen occasionally in winter.

Sharp-shinned Hawk (*Accipiter velox*).—A tolerably common migrant and rare breeder; nest found.

Cooper's Hawk (*Accipiter cooperi*).—Rare, summer resident: nests found.

Goshawk (*Astur atricapillus atricapillus*).—Rare, in migrations and winter.

Western Red-tail (*Buteo borealis calurus*).—A common resident.

Krider's Hawk (*Buteo borealis kriderí*).—A common migrant.

Swainson's Hawk (*Buteo swainsoni*).—Breeds abundantly. Arrives early in April and departs in October.

Red-shouldered Hawk (*Buteo lineatus lineatus*).—A tolerably common migrant.

Broad-winged Hawk (*Buteo platypterus*).—A regular but uncommon migrant.

Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*).—Common in winter.

Ferruginous Rough-leg (*Archibuteo ferrugineus*).—Common in migrations and winter.

Golden Eagle (*Aquila chrysaetos*).—Occasional except in the summer.

Bald Eagle (*Haliaetus leucocephalus leucocephalus*).—Very rare winter vistant.

Gray Gyrfalcon (*Falco rusticolus rusticolus*).—A rare winter visitant. Agersborg collected one in 1880. I saw one in 1910.

Prairie Falcon (*Falco mexicanus*).—Occasional except in midsummer.

Duck Hawk (*Falco peregrinus anatum*).—Occasional migrant.

Pigeon Hawk (*Falco columbarius columbarius*).—Tolerably common migrant.

Richardson's Pigeon Hawk (*Falco columbarius richardsoni*).—A fairly common migrant. The type locality is Vermilion.

Sparrow Hawk (*Falco sparverius sparverius*).—Breeds abundantly.

Osprey (*Pandion haliaetus carolinensis*).—A rare migrant.

Barn Owl (*Aluco pratincola*).—Occasionally met with. Two specimens are in the museum, the last one having been taken November 26, 1912.

Long-eared Owl (*Asio wilsonianus*).—An abundant migrant and occasional summer resident.

Short-eared Owl (*Asio flammeus*).—Abundant except in winter, when it is rare.

Barred Owl (*Strix varia varia*).—Fairly frequent in winter. One pair nested in a wooded ravine, a short distance east of Vermillion, during the summer of 1912.

Screech Owl (*Otus asio asio*).—The most abundant owl; resident.

Western Horned Owl (*Bubo virginianus pallescens*).—Common in winter.

Arctic Horned Owl (*Bubo virginianus subarcticus*).—Two captures recorded by Agersborg.

Great Horned Owl (*Bubo virginianus virginianus*).—Perhaps an occasional resident.

Snowy Owl (*Nyctea nyctea*).—Irregularly common in winter.

Burrowing Owl (*Speotyto cunicularia hypogaea*).—An abundant summer resident. Most of these owls nest in deserted badger holes as prairie dogs are not found in this vicinity.

Yellow-billed Cuckoo (*Coccyzus americanus americanus*).—Nests commonly, arriving about May 15, and leaving September 1.

Black-billed Cuckoo (*Coccyzus erythrophthalmus*).—A common summer resident.

Belted Kingfisher (*Ceryle alcyon*).—Breeds commonly along the rivers.

Hairy Woodpecker (*Dryobates villosus villosus*).—Common in winter, and occasional in summer.

Downy Woodpecker (*Dryobates pubescens medianus*).—A common resident.

Yellow-bellied Sapsucker (*Sphyrapicus varius varius*).—Irregular migrant; rare, summer resident.

Redheaded Woodpecker (*Melanerpes erthrocephalus*).—An abundant summer resident.

Northern Flicker (*Colaptes auratus luteus*).—Abundant in summer, common in winter.

Red-shafted Flicker (*Colaptes cafer collaris*).—Rare visitor.

Whip-poor-will (*Antrostomus vociferus vociferus*).—A tolerably frequent summer resident.

Sennett's Nighthawk (*Chordeiles virginianus sennetti*).—An abundant summer resident.

Chimney Swift (*Chaetura pelagica*).—Abundant nester in the towns.

Ruby-throated Hummingbird (*Archilochus colubris*).—Several pairs have bred in Vermilion the last few summers.

Kingbird (*Tyrannus tyrannus*).—An abundant summer resident.

Arkansas Kingbird (*Tyrannus verticalis*).—Common in summer.

especially about the small groves and "tree claims" of the prairies.

Phoebe (*Sayornis phoebe*).—A common summer resident. Remained until December 1st in the mild autumn of 1912.

Say's Phoebe (*Sayornis sayus*).—A rare or accidental visitor during the spring migration; recorded by E. H. Sweet in May, 1902.

Olive-sided Flycatcher (*Nuttalornis borealis*).—Rare migrant.

Wood Pewee (*Myiochanes virens*).—Common breeder, especially in the town.

Alder Flycatcher (*Empidonax traillii alnorum*).—A fairly abundant breeder in the willow thickets along the streams.

Least Flycatcher (*Empidonax minimus*).—Tolerably common summer resident.

Prairie Horned Lark (*Octocoris alpestris praticola*).—Common in winter, but quite rare in summer.

Desert Horned Lark (*Octocoris alpestris leucolaema*).—A winter visitor.

Blue Jay (*Cyanocitta cristata cristata*).—An abundant resident.

Northern Raven (*Corvus corax principalis*).—Reported by Agersborg as a rare winter visitor.

Crow (*Corvus brachyrhynchos brachyrhynchos*).—Abundant resident.

Bobolink (*Dolichonyx oryzivorus*).—An abundant summer resident.

Cowbird (*Molothrus ater ater*).—Abundant from April to September.

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*).—Numerous nester in the few marshes which have cattails and reeds.

Thick-billed Red-wing (*Agelaius phoeniceus fortis*).—Breeds abundantly in reeds of marshes and in willows at water's edge. Arrives about the middle of March and leaves late in November or early in December.

Western Meadowlark (*Sturnella neglecta*).—One of the more abundant prairie birds from mid-April to November; occasionally an individual winters.

Orchard Oriole (*Icterus spurius*).—Abundantly represented in the summer (May 15-July 31), especially in the willow groves along the rivers.

Baltimore Oriole (*Icterus galbula*).—A common summer resident, especially in the towns.

Bullock's Oriole (*Icterus bullocki*).—An occasional migrant. Reported by Agersborg to occasionally breed.

Rusty Blackbird (*Euphagus carolinus*).—A rare migrant.

Brewer's Blackbird (*Euphagus cyanocephalus*).—A common migrant. March and April, October and November. Also seen early in February, 1912.

Bronzed Grackle (*Quiscalus quiscalus aeneus*).—Abundant from March 15 to October; occasional in December.

Evening Grosbeak (*Hesperiphona vespertina vespertina*).—Rare winter visitant.

Purple Finch (*Carpodacus purpureus purpureus*).—A rare migrant.

Crossbill (*Loxia curvirostra minor*).—Rare migrant.

White-winged Crossbill (*Loxia leucoptera*).—A rare migrant.

Redpoll (*Acanthis linaria linaria*).—Abundant in the winter months about the groves.

Goldfinch (*Astragalinus tristis tristis*).—An abundant resident.

Pine Siskin (*Spinus pinus*).—Tolerably common migrant, and occasionally common in winter.

Snow Bunting (*Plectrophenax nivalis nivalis*).—Common some winters, but rare others.

Lapland Longspur (*Calcarius lapponicus lapponicus*).—Fairly plentiful from September to April.

Chestnut-collared Longspur (*Calcarius ornatus*).—An abundant migrant, a rare breeder, and an occasional winter resident.

Western Vesper Sparrow (*Poocetes gramineus confinis*).—A tolerably common breeder.

Savannah Sparrow (*Passerculus sandwichensis savanna*).—A tolerably common breeder. Abundant in migrations, especially in late April and mid-September.

Western Grasshopper Sparrow (*Ammodramus savannarum bimaculatus*).—Abundant from late April till early September.

Henslow's Sparrow (*Passerherbulus henslowi henslowi*).—A common migrant.

Leconte's Sparrow (*Passerherbulus lecontei*).—Tolerably common migrant.

Nelson's Sparrow (*Passerherbulus nelsoni nelsoni*).—A rare spring migrant; taken.

Lark Sparrow (*Chondestes grammacus grammacus*).—Nests tolerably frequent, especially in tree claims on the plains.

Harris's Sparrow (*Zonotrichia querula*).—An abundant migrant. One seen as late as June 18, 1912.

White-crowned Sparrow (*Zonotrichia leucophrys leucophrys*).—A common migrant.

Gambel's Sparrow (*Zonotrichia leucophrys gambelii*).—Hayden captured a specimen of this variety near Vermilion in 1857.

White-throated Sparrow (*Zonotrichia albicollis*).—A very common migrant.

Western Tree Sparrow (*Spizella monticola ochracea*).—The most abundant sparrow of the thickets from November to April.

Chipping Sparrow (*Spizella passerina passerina*).—Common during the summer months; arrived March 12, 1913.

Clay-colored Sparrow (*Spizella pallida*).—Plentiful in migration, frequently nests.

Western Field Sparrow (*Spizella pusilla arenacea*).—The most abundant sparrow during the summer months about the bluffs.

Slate-colored Junco (*Junco hyemalis hyemalis*).—Plentiful in migrations; winters fairly plentiful in weed patches in the Missouri valley.

Song Sparrow (*Melospiza melodia melodia*).—Abundant migrant and rare in summer along the wooded streams.

Sabuta Song Sparrow (*Melospiza melodia guddi*).—Taken in migration near Vermilion.

Lincoln's Sparrow (*Melospiza lincolni lincolni*).—Regular migrant.

Swamp Sparrow (*Melospiza georgiana*).—Rare in the summer, frequent in migrations.

Fox Sparrow (*Passerella iliaca iliaca*).—Irregular migrant.

Towhee (*Pipilo erythrophthalmus erythrophthalmus*).—Nests commonly. Seen as late as December, 1912.

Arctic Towhee (*Pipilio maculatus arcticus*).—Plentiful in migration.

Cardinal (*Cardinalis cardinalis cardinalis*).—A tolerably common resident in the Missouri valley, near Vermilion.

Rose-breasted Grosbeak (*Zamelodia ludoviciana*).—Abundant from early May to early September, especially in the city of Vermilion, where its song is perhaps the most frequent of bird songs during May and June.

Black-headed Grosbeak (*Zamelodia melanocephala*).—Recorded by Agersborg, and by Rowley, as an occasional summer resident.

Indigo Bunting (*Passerina cyanea*).—An abundant summer resident.

Lazuli Bunting (*Passerina amoena*).—An occasional or accidental visitor. One certainly seen in Vermilion May 24, 1912.

Dickcissel (*Spiza americana*).—Very abundant during June and July.

Lark Bunting (*Calamospiza melanocorys*).—At present an uncommon migrant. Recorded by Rowley and Sweet and Agersborg as formerly a common nester during the dry years of the late 80's and 90's.

Scarlet Tanager (*Piranga erythromelas*).—A tolerably common summer resident.

Purple Martin (*Progne subis subis.*)—Plentiful in summer about the towns.

Cliff Swallow (*Petrochelidon lunifrons lunifrons*).—Nests in colonies under the eaves of barns. Locally abundant.

Barn Swallow (*Hirundo erythrogastra*).—This is the best known swallow, as it nests in all barns.

Tree Swallow (*Iridoprocne bicolor*).—An abundant migrant and rare breeder.

Bank Swallow (*Riparia riparia*).—Breeds in large colonies along the river.

Rough-winged Swallow (*Stelgidopteryx serripennis*).—Breeds in small colonies in cut banks along roads and streams.

Bohemian Waxwing (*Bombycilla garrula*).—Irregular during autumn, winter and spring.

Cedar Waxwing (*Bombycilla cedrorum*).—Common migrant; occasionally nests, rarely winters.

Northern Shrike (*Lanius borealis*).—Common in winter.

White-rumped Shrike (*Lanius ludovicianus excubitorides*).—Breeds in most tree claims.

Red-eyed Vireo (*Vireosylva olivacea*).—A common summer resident.

Philadelphia Vireo (*Vireosylva philadelphica*).—A rare migrant.

Warbling Vireo (*Vireosylva gilva gilva*).—To be found in many groves in summer.

Bell's Vireo (*Vireo belli belli*).—Rare breeder; nest found by Rowley.

Blue-headed Vireo (*Lanivireo solitarius solitarius*).—A rare spring migrant.

Black and White Warbler (*Mniotilta varia*).—A very common migrant.

Orange-crowned Warbler (*Vermivora celata celata*).—A tolerably common, regular, migrant.

Tennessee Warbler (*Vermivora peregrina*).—A rare spring migrant.

Yellow Warbler (*Dendroica aestiva aestiva*).—This species can be found, throughout the breeding season, in almost every grove.

Black-throated Blue Warbler (*Dendroica caerulescens caerulescens*).—A fairly common migrant.

Myrtle Warbler (*Dendroica coronata*).—An abundant migrant.

Magnolia Warbler (*Dendroica magnolia*).—A common migrant.

Chestnut-sided Warbler (*Dendroica pennsylvanica*).—An uncommon migrant.

Bay-breasted Warbler (*Dendroica castanea*).—A rare migrant.

Black-poll Warbler (*Dendroica striata*).—An abundant migrant

Blackburnian Warbler (*Dendroica fusca*).—A rare spring migrant.

Black-throated Green Warbler (*Dendroica virens*).—An uncommon migrant.

Palm Warbler (*Dendroica palmarum palmarum*).—A common migrant.

Oven-bird (*Seiurus aurocapillus*).—A common summer resident.

Grinnell's Water-Thrush (*Seiurus noveboracensis notabilis*).—Common in spring and fall along the streams.

Mourning Warbler (*Oporornis philadelphia*).—A rare migrant; quite common in May, 1912.

Western Yellow-throat (*Geothlypis trichas occidentalis*).—A common migrant and fairly common breeder.

Yellow-breasted Chat (*Icteria virens virens*).—Breeds abundantly in the low willow thickets of the Missouri flood plains along old channels.

Wilson's Warbler (*Wilsonia pusilla pusilla*).—A common migrant.

Redstart (*Setophaga ruticilla*).—Abundant migrant and common breeder.

Pipit (*Anthus rubescens*).—A common migrant.

Sprague's Pipit (*Anthus spragueï*).—A tolerably common migrant.

Mockingbird (*Mimus polyglottos polyglottos*).—An accidental spring visitor. One observed May 7, 1911.

Catbird (*Dumetella carolinensis*).—An abundant breeder in all thickets.

Brown Thrasher (*Toxostoma rufum*).—Plentiful in summer.

Western House Wren (*Troglodytes aedon parkmani*).—Breeds abundantly along the river and about the towns.

Winter Wren (*Nannus hiemalis*).—A rare migrant.

Short-billed Marsh Wren (*Cistothorus stellaris*).—A tolerably common migrant, and according to Agersborg, a rare summer resident.

Prairie Marsh Wren (*Telmatodytes palustris iliacus*).—A tolerably common summer resident.

Brown Creeper (*Certhia familiaris americana*).—Abundant winter and rare summer resident.

White-breasted Nuthatch (*Sitta carolinensis carolinensis*).—Tolerably common resident; abundant during the winter months, especially in Vermilion.

Red-breasted Nuthatch (*Sitta canadensis*).—A rare migrant.

Long-tailed Chickadee (*Penthestes atricapillus septentrionalis*).—A resident; in winter abundant.

Golden-crowned Kinglet (*Regulus satrapa satrapa*).—A tolerably common migrant and winter resident.

Ruby-crowned Kinglet (*Regulus calendula*).—Common in migrations and occasional in winter.

Townsend's Solitaire (*Myadestes townsendi*).—An accidental winter visitor. For an account of a straggler seen January 9, 1911, see The Auk, April, 1911, p. 270.

Wood Thrush (*Hylocichla mustelina*).—Breeds abundantly in Vermilion and in the wooded ravines.

Willow Thrush (*Hylocichla fuscescens salicicola*).—Common during migrations and rare during the breeding season.

Gray-cheeked Thrush (*Hylocichla aliciae aliciae*).—A common migrant.

Olive-backed Thrush (*Hylocichla ustulata swainsoni*).—An abundant migrant.

Hermit Thrush (*Hylocichla guttata pallasi*).—A rare migrant.

Robin (*Planesticus migratorius migratorius*).—An abundant resident. During the winter the robins form large flocks, which spend most of the time in the groves of the Missouri valley, where they feed extensively upon the berries of smilax.

Bluebird (*Sialia sialis sialis*).—A few pairs nest each year in this county.

THE SECOND ANNUAL MEETING OF THE WILSON ORNITHOLOGICAL CLUB was called to order at 9 a. m., in the Assembly Room of the New Morrison Hotel, Chicago, by President T. C. Stephens. The whole morning was devoted to the completion of the reorganization, as unfinished business from the last annual meeting, and with the consideration of new business. The roll call of members showed twenty-three members in attendance, of whom four were women. A long list of new members was acted upon favorably. Plans for an active campaign looking toward advertising the existence of this organization in the central districts of the country, and securing their coöperation were perfected, and committees appointed to carry the plans through.

After the convening of the members in the afternoon, and the completion of routine business, the following papers were presented:

Food of the Virginia Rail, by Alvin R. Cahn, of the University of Wisconsin.

Nest-Life of the Grosbeak, by Ira N. Gabrielson, of the Marshalltown, Iowa, public schools.

Birds from an Upstairs Window, by Mrs. O. M. Schantz, of Cicero, Ill.

Birds of Cedar Point, Ohio, and Vicinity—A Supplementary Report, by Lynds Jones, of Oberlin College.

Birds by the Wayside: I. India in January, by Miss Althea R. Sherman, of National, Iowa.

The evening session was given over to a report by District Inspector E. A. Cleasby upon the results of the Federal Migratory Bird Law, for the district of which Wisconsin is nearly the center. This report elicited a considerable discussion from members and others present.

At the Wednesday morning session the following papers were presented: June Birds of Laramie, Wyoming, by Rev. W. F. Henninger, of New Bremen, Ohio. Discouraging the English Sparrow, by Thomas H. Whitney, of Atlantic, Iowa. Field and Other Notes, by Rev. C. W. G. Eifrig, of Oak Park, Ill. (Illustrated.) A Nest Study of the Western Meadowlark, by Jay Kempkes, of Pella, Iowa. (Illustrated.) The Waterfowl of Illinois, by Gerard Alan Abbott, of Chicago. (Illustrated.) Birds of the Mid-Pacific, by Homer R. Dill. (Read by title.) Notes on the Raptorial Birds of Iowa, by B. H. Bailey. (Read by title.)

Dr. T. C. Stephens, of Morningside College, Sioux City, Iowa, was reëlected President, Mr. George L. Fordyce, of Youngstown, Ohio, reëlected Vice-President; Prof. Thos. L. Hankinson, of Charleston, Ill., was elected Secretary, as the former Secretary, Mr. O. M. Schantz, wished to be relieved; Mr. P. B. Coffin, 3232 Groveland Ave., Chicago, was reelected Treasurer; and the Executive Council appointed Gerard Alan Abott, 1543 E. 61st St., Chicago, Ill., Business Manager, and Lynds Jones, Oberlin, Ohio, Editor of the Wilson Bulleton.

This second annual meeting was a decided success, and it means that each gathering that is to be will increase in interest and value to those who attend. The field which we cover is large and the need for coöperation correspondingly great. Let everybody plan to be present at the third annual meeting.

The April First Bird Census

Youngstown, O., April 1, 1915, 8:30 a. m. to 5:30 p. m.—Partly cloudy, wind northwest; temperature, 34 to 38; territory covered Mill Creek Park, Lake Hamilton, Pine Lake and vicinity, Pied-billed Grebe, 1; Herring Gull, 2; Red-breasted Merganser, 1; Hooded Merganser, 20; Mallard, 10; Black Duck, 52; Green-winged Teal, 1; Pintail, 9; Redhead, 57; Canvas-back, 3; Scaup Duck, 9; Lesser Scaup Duck, 25; Ring-necked Duck, 2; Golden-eye, 17; Coot, 3; Killdeer, 9; Ruffed Grouse, 2; Marsh Hawk, 1; Sparrow Hawk, 1; Great Horned Owl, 1; Hairy Woodpecker, 2; Downy Woodpecker, 2; Red-bellied Woodpecker, 1; Northern Flicker, 2; Phoebe, 1; Blue Jay, 12; Crow, 32; Red-winged Blackbird, 32; Meadowlark, 5; Bronzed Grackle, 28; Goldfinch, 16; Tree Sparrow, 31; Slate-colored Junco, 2; Song Sparrow, 66; Cardinal, 21; Brown Creeper, 1; Red-breasted Nuthatch, 21; Tufted Titmouse, 12; Chickadee, 2; Robin, 48; Bluebird, 5. Total, 41 species, 568 individuals. George L. Fordyce and John P. Young.

On account of steady cold weather during the month of March, the migration of the birds was much later than usual and many species usually here on April 1st do not appear on this list.

Port Byron, Ill., April 4, 8 to 10:30 a. m. and 12:20 to 4 p. m.—Cloudy; ground bare and dry; wind south, brisk; temperature 40° to 60°. Bob-white, 12; Rough-legged Hawk, 1; Screech Owl, 2; Great Horned Owl, 4 (pair with two young ones, young half grown and sitting on edge of nest); Hairy Woodpecker, 7; Downy Woodpecker, 13; Red-bellied Woodpecker, 3; Prairie Horned Lark, 6; Blue Jay, 4; Crow, 9; Red-winged Blackbird, 30; Meadowlark, 15; Rusty Blackbird, 20; Bronzed Grackle, 14; Vesper Sparrow, 2; Tree Sparrow, 11; Field Sparrow, 1; Junco, 100; Song Sparrow, 9; Cardinal, 2; Brown Creeper, 1; White-breasted Nuthatch, 10; Tufted Titmouse, 2; Chickadee, 20; Robin, 65; Bluebird, 20. Total, 26 species, 383 individuals.—J. J. SCHAFER.

St. Johnsburg, Vt., April 1, 1915, 7 a. m. to 3 p. m.—Temperature 40°. Traces of snow on the ground. American Crow, 59; Bluebird, 4; American Robin, 3; Purple Finch, 2; Goldfinch, 12; Chickadees, 4; White-breasted Nuthatch, 1; Song Sparrow, 1.

Total, 8 species; 86 individuals.

INEZ A. HOWE.
MABEL A. SHIELDS.

THE WILSON BULLETIN

A Quarterly Magazine Devoted to the Study of Birds. Official Organ of the Wilson Ornithological Club

Edited by **LYNDS JONES**

PUBLISHED BY THE WILSON ORNITHOLOGICAL CLUB, AT CHICAGO, ILL.

Price in the United States, Canada, and Mexico, One Dollar a year, 30 cents a number, post paid. Price in all countries in the International Postal Union, $1.25 a year, 40 cents a number. Subscriptions may be sent to Lynds Jones, Oberlin, Ohio, or to Mr. P. B. Coffin, 3232 Groveland Avenue, Chicago, Ill.

OFFICERS FOR THE CURRENT YEAR

President: Dr. T. C. Stephens, Morningside, Sioux City, Iowa.

Vice-president: Geo. L. Fordyce, Youngstown, Ohio.

Secretary: Thos. L. Hankinson, Charleston, Ill.

Treasurer: P. B. Coffin, 3232 Groveland Ave., Chicago, Ill.

Editor "The Wilson Bulletin": Lynds Jones, Spear Laboratory, Oberlin, Ohio.

Business Manager: Gerard Alan Abbott, 1543 East 61st St., Chicago, Ill.

EDITORIAL

The Editor will leave Oberlin on June 20, and will not return until September 15. Matters relating to the business of the Wilson Bulletin should be addressed to the Business Manager, Gerard Alan Abbott, 1543 E. 61st St., Chicago, Ill. Manuscript intended for publication may be addressed to the Editor at his Oberlin address, and it will be taken care of there.

As may be well known to many readers, the Editor will conduct a party of college student from Oberlin to Seattle, and from there down the coast of Washington from Cape Flattery to Moclips, which lies on the coast north of Gray's Harbor. The party leaves Oberlin on June 20, via the New York Central lines, reaching Seattle on June 24, via C. M. & St. Paul R. R. From Seattle the steamer Bellingham will convey the party to Neah Bay, and from there the trip down the coast will be made by launch and canoe with the coast Indians in charge. While this trip is made for the purpose of the study of the ecology of the region, the birds will receive their fair share of attention, and the islands included in the bird reserves will be visited.

Pressure of work has prevented any extended review of the literature which has come to the Editor's table, nor will it be possible to prepare such copy for the September issue. It is hoped that after the new school year begins this phase of the Bulletin may be resumed.

The absence of the Editor for the summer, and until the time for the issue of the September number, will cause a delay of two or three weeks in the appearance of the September number. The Editor begs for so much of the indulgence of the readers of the Bulletin.

The account of the second annual meeting of the Wilson Ornithological Club was crowded out of the March issue, where it should have appeared. It is presented at this late date as a matter of record. The time of the next meeting has not yet been decided upon.

CORRESPONDENCE

Editor, Wilson Bulletin.

DEAR SIR:—An article* in the last volume of your publication contains statements subject to correction. This article is a criticism of a review which the writer published of four papers on field observations upon the feeding of nestling birds, prepared by students of the Iowa Lakeside Laboratory.

The review to which Professor Stephens objects was published in the Auk for July, 1914 (pp. 420-421). It was intentionally made brief and mild in tone. Professor Stephens, however, refers to the "captious reviewer," a trite phrase that slips readily from the pen, but which in the present instance is unjustified. That the reviewer was reluctant to criticize the papers considered is shown by the fact that the earliest one was published two years before the review. The overconfidence exhibited by its writer in recording the identity of items of food fed to nestlings was thought to be only one of the defects to be expected in an early scientific essay. It was hoped that succeeding papers would be more conservative. However, the repetition of the same kind of work made me decide to protest.

* Stephens, T. C., A Rejoinder. Wilson Bull. XXVI, No. 3, Sept. 1914, pp. 157-161.

In my review I made the following remark: "The flaw the reviewer would point out is perhaps due to over-enthusiasm on the part of the observers, or perhaps to failure to realize the difficulty of making exact identifications of insects." Professor Stephens' reply contains nothing to offset this impression. I warrant that if any of the persons concerned in making the studies of the food of nestlings in question will take the trouble to master any group of insects, he will no longer care to risk making specific identifications of small insects that are being fed to nestling birds.

The detailed nature of statements relating to the food given nestling catbirds by their parents is illustrated by the following quotation: "Among the 55 beetles fed were recognized may-beetles, click-beetles, tiger-beetles, water-beetles, and snout beetles of various species. The flies were mostly flesh flies, though house and stable flies were noted.*

Professor Stephens gives some explanations, which had they been in the original articles reviewed, would have greatly modified the impression produced. For instance he says regarding the observations on the catbird: "Flies swarmed about, ... and the observer in the blind could see the catbird capture and feed them to the young birds in the nest. A number of these flies were caught and submitted to an entomologist . . . . who named the flies as above" (p. 158). On this evidence, however, few would card-index the catbird as an enemy of any particular species among these flies; the chance for error is too great. There may have been a score of species of flies among those the birds were preying upon, and which particular ones were taken, could not have been accurately known. This instance as explained therefore does not constitute a definite record of catbirds feeding the identified species to their young. The paper reviewed, however, unqualifiedly states that among the insects fed were house and stable flies. The single instance of a mosquito being fed to the young by a catbird is made clear by a belated explanation, which should have been in the original article. It appears that a mosquito seen within the blind flew out and was snapped up by the bird. But this does not prepare the way for acceptance of the 65 records for the yellow warbler, as the circumstances could not have been the same. Even though this nest was only two feet away, the part of a mosquito that might protrude from a warbler's bill, in nine cases out of ten, probably would not suffice for certain identification at that distance.

Would Professor Stephens or his students on the basis of the nestling studies reported care formally to add the name of the cat-

* Wilson Bulletin, Vol. XXV, No. 4, Dec. 1913, pp. 179-180.

bird to the list of enemies of the house fly (*Musca domestica*) and the stable fly (*Stomoxys calcitrans*), both members of a family characterized by obscure markings and slight specific differences, and which are much resembled by various flies of at least three other families? Or would they list the yellow warbler as a predator upon mosquitos, on the strength of field observations only, when the number of species of small flies that superficially resemble mosquitos is legion? If so, their idea of scientific accuracy is unusual.

The writer in his original review tried to give a dispassionate criticism of a single unfortunate tendency of papers by less experienced investigators. This was intended only as advice for future caution and the general merit of the contributions was recognized. The more of such intimate studies of birds, the better, provided strict accuracy be kept in view.

Professor Stephens, however, adopts a controversial attitude in his rejoinder, which leads him to attribute to me sentiments that exist only in his mental conception of me. His remarks also contain unjustified conclusions resulting from ignorance, and innuendos, which probably would not have been made had he adopted disputation rather than controversy as his medium. A few examples follow:

1. "The food of nestling birds, a field which seems to be guarded zealously . . . . as the peculiar domain of the Biological Survey" (p. 157).

Nothing said in the review cited by Professor Stephens warrants this insinuation, nor does anything that the writer has said elsewhere. The Biological Survey has consistently encouraged and assisted the scientific study of the food of birds, wherever attempted.

2. The proposal "to tie bags over the anal orifices of nestling birds for the purpose of collecting the excreta will be highly amusing to anyone who has noticed young birds in the nest" (p. 160).

The proposal as stated may perhaps be amusing, but so far as I know Professor Stephens is the only one who has made it. The bags used by the writer have enveloped about three-quarters of the whole bodies of nestlings, being tied on over the breast and under the wings. All excrement voided was obtained, and the records of different nestlings kept separate by the aid of different colored tapes used on the bags. After a short time the parent birds did not pay much attention to the bags.

3. "Vigorous, though quibbling criticism" (p. 160).

No criticism can be called quibbling which definitely challenges the accuracy of a scientific article.

4. In two paragraphs, on page 160, Professor Stephens seeks to lessen the effect of my statements that "a great many birds feed

[their young] by regurgitation." He says in part "In our studies on the passerine birds we have succeeded in following the feeding of at least one out of a brood, from the moment it left the egg until it left the nest, in the cases of the yellow warbler, the catbird and the meadowlark . . . . and in each of these instances there has been no feeding by regurgitation. This is known simply from the fact that the food has been visible in the bird's bill."

The fact stated in the last sentence by no means disproves regurgitation. That food is visible in the bill is no proof that the gullet does not also contain food. The species above mentioned sometimes, at least, feed by regurgitation. In Mrs. Wheelock's article on "Regurgitative feeding of nestlings" in the Auk for January, 1905 (pp. 54-70), this capable field observer records more than thirty-five species of birds as feeding their young by regurgitation including all of the species Professor Stephens says were not observed to use this method.

Professor F. E. L. Beal has seen the following species feed their young by regurgitation: Rufous hummingbird, Arkansas goldfinch, California towhee, black-headed grosbeak, and the Eastern robin.

The writer knows from personal experience, that the cardinal, the rose-breasted grosbeak, the Eastern goldfinch, the English sparrow, and the red-eyed vireo feed their young at least in part by this method, the finches almost wholly. This is a longer list of birds than Professor Stephens claims acquaintance with and may show that my definition of limited experience in this field of work is quite different from his own, and that it does not justify the slur he pleases to record on page 160.

5. "The examination of a stomach will give, at best, the story of only three or four hours of the bird's life" (p. 160).

True, but when enough stomachs are collected, all of the hours will be typically represented.

6. "What [food] is unrecognizable cannot be taken into account, except as 'unknown,' or as 'miscellaneous.' If the tables or diagrams do not show this, must we not conclude that the writer has discarded the unidentified material?" (p. 161).

Professor Stephens will find entries under miscellaneous animal and miscellaneous vegetable food in practically every formal report by the Biological Survey upon the food of birds. None of the material is discarded.

7. "Too often the adherent of stomach examination publishes only his percentage results, without the detailed data upon which his percentages are based, which are necessary in a strictly scientific piece of work" (p. 101).

It is impracticable to publish detailed analyses of hundreds and

thousands of bird stomachs, and in fact impossible in Government documents. The data and the specimens upon which they are based, are kept on file in the Biological Survey, for inspection by anyone interested.

8. Relating to field observations, "it yields results with far greater accuracy than its critics are ready to admit" (p. 161).

The writer made no criticism of field observations but only of a certain phase of a few particular pieces of such work. Field work is necessary to round out the study of almost any biological problem. Its necessity, however, is no greater than the necessity that it should be accurate.

9. "It is not particularly reassuring to read the boast of having killed so many thousands of nestling birds in order to determine what their food has been."

Professor Stephens has never yet been compelled to read such a "boast," for the reason that nothing like it has been published.

It ill befits anyone interested in the scientific study of ornithology, and especially is this true of the President of a society whose sole object is the study of birds, to say or do anything that will render the collecting of specimens more difficult than it now is.* Those advocating all-inclusive protection have so far had their way that scientific collecting has been forbidden in some states and so hedged about with restrictions as to be impracticable in several others. The laws of some states are even so worded that no relief can be had when serious losses are suffered because of ravages by birds.

As to the effect of scientific collecting upon the bird population, it is undoubtedly true that more birds have been destroyed by single cold rain, or sleet storms, or other meteoric disturbances, than the total that have been killed by all of the scientific collectors in this country since the beginning.

10. "What is needed above all on the part of iconoclastic reviewers is more certainty and less quibbling, and more hard work in the field and laboratory that there may be developed an appreciation of the difficulties to be encountered in productive effort" (p 161).

Professor Stephens' controversial attitude is nowhere more manifest than here, and leads him far astray. The writer has spent practically all of the working days of the past ten years and more, in field and laboratory study of the food of birds, a total that many times exceeds that employed to the same end by Professor Stephens and his students.

---

* In this connection see Grinnell, J., Conserve the Collector, Science, N. S. XLI, pp. 229-232, Feb. 12, 1915.

The degree of my certainty regarding questionable identifications in the papers I reviewed in this: I submitted the original statements of the authors reviewed, and my criticisms to my colleagues in economic ornithology and to various entomologists in Washington, and have repeated this process exhibiting Professor Stephens' remarks. Without exception these specialists have been of the opinion that positive identifications could not have been made under the conditions described for the cases mentioned in my review.

In conclusion I may say that my reviews in the Auk are initialled because that is the invariable custom in that journal, and not because of any desire for anonymity.

W. L. McATEE.

SCIENCE, ORNITHOLOGY, AND THE WAR.

Editor of The Wilson Bulletin:

While the daily newspapers, journals, and magazines of every description, as well as other prints — to say not a word of new books on the subject — teem with accounts of how the great conflict in Europe is affecting various interests and industries in this country, there is hardly a paragraph ever published which has anything to say of the influence which this terrible international imbroglio is exerting upon the various sciences, scientific institutions, literature, and upon scientific researchers of every department in nearly all parts of the world.

In so far as Europe is concerned, we hear a great deal in regard to how this stupendous struggle has crushed many trade interests; the enormous number of casualties that has thus far been the result of it; the diseases it has spread; the mental and physical defects which will result from it upon the offspring of generations of people to come, and, indeed, vast and far-reaching effects in many other directions too numerous to mention. All this is being incessantly and voluminously brought before us in the aforesaid manner, with rarely a word as to how science has thus far fared in it all.

The dollar and the base-ball being the two chief concerns in this country demanding the greatest amount of attention and cultivation — at least on the part of nine-tenths of the total population — it becomes a matter of no surprise that between these two engrossing pursuits the public cares not a rap for the fact that, since the first week in August, 1914, until the end of January, 1915, there had not been received at the library of the United States National Museum, and probably at the libraries of other institutions of the kind in this country, a single German or French scientific journal

of any importance devoted to biology. Especially are the elegant publications of this class coming from Germany missed, including those issuing contributions on systematic ornithology and avian anatomy. This is the more distressing and discouraging for the reason that we have so few publications of the kind in this country. In so far as some of the best German zoölogical publications are concerned, it would seem that they may not appear even in Germany until after the war is over. This statement is based upon personal experience, for at the commencement of the trouble in August last, I had an extensive monograph on the genus *Dendrocygna* and its allies, with many colored and plain plates, all up in type for the Zoölogische Jahrbücher; and I am now told that I will not see my separata of that production for some time.

In Hungary (Budapest) they have fared a little better; for among other publications, not only will *Aquila* (Vol. XXI) soon appear, but Americans having contributions in that issue are receiving their separata at the rate of *eight at a time*—all that the foreign postal authorities and the censors will pass "in one lot." This is remarkable when we come to know what they have to contend with in the Royal Hungarian Central Bureau for Ornithology. Not only are the premises and a part of the buildings, as the late Director Otto Herman wrote me, used for the accommodation of the wounded soldiers of the Austrian Army, but some of their scientific staff may have actually been sent to the front to serve as soldiers. Among these I may mention my friend, Dr. Koloman Lambrecht, of the Museum of Budapest, who has just received his degree of Doctor of Philosophy, and who was in the midst of his researches upon fossil birds, when he was selected for military duty. It is impossible to command language or words to express one's views upon such sacrifices as these, especially in the light of the senselessness of the present stupendous and unnecessary struggle, where kaisers and kings, in their war-game amusements, are allowing such material to take the chances of being sacrificed.

In England they are not faring much better in these respects, for not only have upwards of twenty or more zoölogists and botanists, members of the regular staff of the British Museum, gone to the front, but doubtless before this letter is up in type several of them may have been killed in the trenches. And well may we ask: to what end? The same bloody war-game of the crowned heads,—for the true principle of "patriotism" does not enter into it. Doctor Mitchell, Secretary of the London Zoölogical Society, writes me that they will have but very little money to spend in these days for plates or for lengthy contributions in *The Ibis* or in the publications of the Zoölogical Society; and Mr. John Henry Gurney, a

Corresponding Fellow of the A. O. U., in a letter to me under date of January 2, 1915, says: "I have not heard of any naturalists being killed in this terrible war, but have already lost several personal friends.

"I have two sons-in-law at the Front, one of whom is the son of E. G. Mead-Waldo, the well-known Ornithologist, but mercifully they have escaped so far. I have also two nephews out, and my son is with the Red Cross.

"In consequence of the War the sale of my book, "The Gannet," has completely stopped, and the only hope I have for it now is that the United States naturalists may buy some copies of the 140 still remaining unsold." *

It is profoundly to be hoped, quite apart from the casualties that may take place among scientists of all classes in this disastrous war, that no one of the number of the ornithologists of the various countries involved, whose names appear among our Honorary and Corresponding Fellows of the American Ornithologists' Union, will be called upon for army service and perhaps fall victims to the demand for their services in any such capacity. It is all very well if a naturalist be a commissioned officer in the army or navy to meet the duties devolving upon him in times of war, notwithstanding the danger in which his life may be placed or his researches interrupted; but this is vastly different from taking civilians who are men of science, of exceptional and unique value and actively at work upon scientific researches in institutions, out of their positions and making privates in the army of them, carrying them out on the firing line, to run the chance of being shot down alongside of Tom, Dick, or Harry, who, in many instances, may not be worth the cartridge it takes to kill him, and who often is a good riddance to the country that claims him as citizen. The world can not afford to do this; no nation ought to place the lives of such of her men of mark in jeopardy,—to place them where a single bullet, fired by some common soldier, may wipe out a life that it has required generations to produce, and whose works may be one of the torches of an advancing civilization. The very thought of such stupidity and senseless waste is in itself appalling and, to the cultured mind, almost paralyzing.

Quite apart from all this, it may be well to note that this war in Europe is having a very unlooked-for effect upon American science. Before this international catastrophe on the Continent, scien-

* Incidentally I may remark that I hope that those who have not already a copy of Mr. Gurney's valuable classic on the gannet will avail themselves of this opportunity to place one upon their shelves; it is a model volume on the life-history of the species.

tific productions of all kinds, including many in ornithology, were *printed* abroad — usually in Germany: and the plates illustrating them were engraved abroad — usually in Germany; while at the present time, all of such work is being done in our own country. This, in the end, may prove to be a great stimulation to American science, including all the departments of biology. As it now stands there is not money enough in *any* scientific institution in the United States to publish even a small part of the material presented in any particular instance. All of our great scientific institutions are *out of funds* and almost helpless in the matter of passing into print the results of the labors of men and women of science in this country. This is discouraging enough to those who are connected with institutions where the publication of their work is taken as a matter of fact, while it is enough to drive the private researcher out of his laboratory to seek other lines for his energy.

In a second interesting letter received from Mr. Gurney, under date of February 1st, 1915, he sends me some very curious notes on the effect of the heavy gun-firing on certain sea-birds.

"The naval fight in the North Sea on the 24th was audible in this country and Yorkshire.

"The distant concussion from the big guns had a curious effect on Pheasants, which in some woods adjoining the coast are said to be greatly perturbed.

"In the same way thousands of screaming Gulls (*Larus ridibundus*, *L. fuscus*, and *L. argentatus*) were tremendously upset by the so-called bombardment of Yarmouth, which by the way the Germans still persist in calling a fortified town.

"Another strange feature has been the washing up of numerous Guillemots, Razorbills and Scoter Ducks (*Uria troile*, *Alca torda*, *Oidemia nigra*) in a more or less moribund condition. These birds had come in contact with the oily petrol, which appears to be thrown off when a mine is discharged, and which rising to the surface, adheres to their plumage."

Faithfully yours,

R. W. SHUFELDT.

Washington, D. C., January 17, 1915.

FIELD NOTES

NESTING HABITS OF KENTUCKY WARBLER.

The interesting account, in your September issue, of the Kentucky Warbler nesting in northern Ohio, brings to mind an experience with a pair of Kentucky Warblers' nest building in the hill country at Cincinnati, Ohio, where it is a well-known bird.

In a bit of sloping woodland we spied a female Kentucky (*Oporornis formosus*) moving about in a suspicious manner. Quietly seating ourselves in a shielded spot we soon found she was indeed nest building.

A large fallen tree in the lowest part of the woodland served as her approach; here she would light, carrying by the top a dry beech leaf, the pink feet being the only visible portion of the bird. The length of the log was traversed and each trip she left it at the same point for the spot of her building.

In Chapman's book, "The Warblers of North America," page 240, is this statement referring to their nest building: "The male unquestionably aids his mate." Our pair was evidently an exception to the rule. As she worked the ringing song of the male could be heard in the distance, but when interest overcame his discretion and he alighted silently in a nearby tree, she stopped in her journey on the log. The very cessation of his song seemed to arouse her suspicions and she stood in a listening attitude; when he came near she grew tense and immovable as a statue until he flew away and his song was again heard in the distance; if he alighted on the log she routed him sharply. After these interruptions she went most leisurely about resuming her work. At no time did the male bring nesting material.

The nest was in the lower part of the wooded slope, which was almost free from shrubbery. The site selected was at the base of a very small horse chestnut, about two feet high.

The beech leaves were prettily placed in a cup form resembling the petals of a half blown rose; some of the leaves were placed lengthwise rather than tip down.

Unfortunately it was necessary to leave before the completion of the nest, which could not have been accomplished before the following day.

This incident occurred on the afternoon of May the seventh.

LUCY V. BAXTER COFFIN.

3232 Groveland Avenue, Chicago, Ill.

THE PROTHONOTARY WARBLER.

Several years ago, while taking a walk, as usual with bird glass in hand, a small bird, warbler size, caught my eye as it flitted about a bush by the side of the track. Its yellow color and the absence of distinct markings, provoked my curiosity, but a search, through both my memory and my books, revealed nothing that answered to the description unless it was the Prothonotary Warbler, and I scarcely dared call it that, for I could find no record of that bird nearer than the western part of the state. The section was swampy and near the margin of Bass Lake, about three miles from this place. I did not make a record of the date of this observance, but should say it was probably the spring of 1907.

June 12, 1910, Mrs. L. E. Parsons and I were at another part of the same swamp, when we found a bird that I recognized at once as the same as the one above referred to and which we both decided must be the Prothonotary Warbler. Again in 1912, June 9th, we were bird hunting in another section, three or four miles southwest of the first mentioned station, when we discovered another specimen of our warbler, and were this time quite sure we were near its nest, and watched it for some time, but could not locate the nest, though our bird was apparently bringing food. This was also a swampy spot, being at the base of a rocky bank where there were many springs. Since that time I have not again seen the bird, though I have been in the Bass Lake region many times. I shall watch for it again this year.

I note by the Wilson Bulletin that this warbler has been seen a number of times recently at Oberlin vicinity and at Huron. Undoubtedly it is working north and east in the state.

ORANGE COOK.

Chardon, Ohio.

THE BEWICK WREN.

On the 18th of April, last year, I was hunting near an old orchard, when a small wrenlike bird, flitting about in a rail fence, attracted my attention. I soon decided it was a stranger to me, for while its actions were decidedly wrenlike and there was the familiar barring on some parts of the bird, there was a longer and different shaped tail, and very distinct white spots on the outer feathers. After following the fence for ten or twelve rods, during which time it allowed me good opportunities for observing its actions and markings, it mounted to near the top of a small tree and gave me a specimen of its vocal powers. Its song was quite different from the House Wren, and to my taste, more pleasing.

A comparison of my findings with the book descriptions left no doubt that I had seen the Bewick Wren and heard its song. So far as I can learn this is also a new record for Geauga County.

ORANGE COOK.

Chardon, Ohio.

A BIRD STORY FROM SOUTH CAROLINA.

(Substantially as related to me by Nathaniel Heyward of Oakley.)

Scene: A rice plantation. Cast: Pickaninny, his mammy, crane (*Florida caerulea*), moonshine (*Ionornis martinica*). Business: An ancient muzzle-loading musket of erratic tendencies, the ammunition more dubious still.

A small negro boy climbed one day to the top of the levee in front of his cabin home. From this point he spied at the edge of the locker bay a crane and a moonshine side by side. Pickaninny at once crouched and skedaddled back down the slope to get the always-loaded family musket. Now he returned to the point of vantage, Mammy lending moral support from the cabin door. Pointing the musket over the levee, Pickaninny took long and careful aim, then pulled the trigger. Eventually the hammer snapped. Mammy now encouraged him by shouting, "Hol er steddy, son, til she go off." During this interval the crane became vexed at moonshine and struck viciously at it with his beak. At last the musket discharged with a resounding "pow" and the moonshine fell over dead. "Dar," said the crane, "I done kill dat moonshine."

W. L. M.

BIRDS OF 1915: TOO FEW AND TOO MANY.

Somewhere in the Mississippi Valley some one must have found the spring migration interesting. That it was not so in northeastern Iowa seems to have been due to the weather coming in wholesale sized installments. March, with continuously too low temperature, followed by a dry April, with high south winds and summer heat on several days, tended to hurry northward without loiterings the birds due the last of March and during April. The unseasonable warmth of April was followed by a wintry May. Seemingly as a result of these combinations very few of the birds that pass to more northerly breeding ranges were seen.

A comparison of the median dates for ten years of the first arrivals of twenty-four of our commonest birds with their dates for 1915 shows a retardation in the first half of the season, and an acceleration in the second half, except that the Killdeer and the

House Wren arrived on their middle dates. Fourteen of the earlier comers were from one to ten days behind the average dates for their first appearance. Of these the Sparrow Hawk was one day late, the Meadowlark and Mourning Dove were two days, and the Robin, Red-winged Blackbird and Flicker were three days late. On the other hand the warm weather of April pushed vegetation forward a week in advance of its normal growth and hastened the appearance of some of the birds from one to six days earlier than their average dates. The Brown Thrasher was one day, the Chipping Sparrow and Chimney Swift were two days, the Bobolink four days, and the Red-headed Woodpecker, Baltimore Oriole and Warbling Vireo were six days ahead of their median dates. To the cold weather that marked the month of May was due, very likely, the slight delay in the appearance of the Maryland Yellowthroat and Catbird. The middle date for both is May 10, but they were not seen until the following day.

It would be a pleasure to announce that our summer residents returned with undiminished ranks, but that was not the case. The greatest losses appear to have occurred in the Icteridae family. In this neighborhood Meadowlarks and Red-winged Blackbirds have far outnumbered other species, being more numerous here than in adjacent territory. They are now by no means scarce, but their numbers are greatly reduced without the reason for this diminution being clear. The same cannot be said of the Bobolink, which from an abundant species has become wholly wanting at present. If pleasant weather should ever come again it may bring out a few Bobolinks, which have sought sheltered places along with other missing species.

In this day of vanishing species it may seem absurd to say that of any there are too many. This expression refers to the viewpoint of the birds, not that of their human friends. There seems to be the possibility of making a place too attractive, and that by the increasing of the numbers of some species they become intolerable to their bird neighbors because of their warring on other's rights. In this year of almost world-wide warfare it is depressing to have one's mind constantly disturbed by the fighting of the birds. Their atrocities are authentic; even two Mourning Doves were seen fighting one day. The whole history of the causes of these forages and the bushwhacking of the birds may never be told, but it would make a ponderous volume if written. To-day (May 28) a Robin is building her third nest, her eggs in two nests having been destroyed by some bird, perhaps by House Wrens or Bronzed Grackles, which seem to be the worst egg-despoilers in our yard. It is not for the sake of food always, for frequently the shells are merely pierced.

For many years the Flicker did not increase in numbers, but for three seasons more have returned and excess in numbers betrays a serious fault in this good bird. Under these conditions he is guilty of nurturing family feuds and robs the nests of his fellows that have located near him. So fighting Flickers are adding to the sorrows of a battling world.

ALTHEA R. SHERMAN.

National, Iowa.

SOME PECULIARITIES OF THE 1915 SPRING MIGRATION IN NORTHERN OHIO.

If one ever had any doubts about the correlation of bird movements with waves of temperature the past migration season would furnish conclusive proof that there is. During the unseasonable warm wave of the second week of February the first migrants appeared, fully two weeks ahead of schedule. This was on February 13 to 15. The second wave was on February 19 to 21, the third not until March 13 to 14, the fourth on March 20 to 23, the fifth April 4 to 7, the sixth April 10 to 12, the seventh April 16 to 20, the eighth April 24 to 28, the ninth May 2 to 6, the tenth May 10 to 17, and the last, composed of a great host of migrating warblers and thrushes, May 21 to June 1. Most of these waves were unusually well-defined, but of course there were scattering records which could not be correlated with anything, as usual. These scattering records may be due to oversight because the individuals were few, or they may be due to the spilling over of a few individuals, the crest of whose wave of migration has halted a short distance to the south of this station.

The Ruddy Duck arrived 70 days before its schedule; the Cowbird 24 days; Red-headed Woodpecker 22 days; Yellow-legs 20 days; Henslow's Sparrow 19 days; Song Sparrow 18 days; Yellow-billed Cuckoo 17 days; Lincoln's Sparrow 16 days; Crow, Robin, Bluebird, Red-winged Blackbird, Ruby-throated Hummingbird, 15 days; Meadowlark, Bronzed Grackle, Cape May Warbler, Acadian Flycatcher, 13 days; Philadelphia Vireo and Red-eyed Vireo 12 days; Wood Pewee 11 days; Blackburnian Warbler, Whippoorwill, House Wren, and Rough-winged Swallow 10 days; Killdeer, Catbird, and Least Flycatcher 9 days; Orange-crowned Warbler, Nashville Warbler 8 days; Orchard Oriole, Water-Thrush, and Crested Flycatcher 7 days; and Spotted Sandpiper 6 days ahead of schedule. The average range either side of the median may be assumed to be five days, as it so works out from year to year.

The Swamp Sparrow was 23 days late; Fox Sparrow and Belted Kingfisher 17; Phoebe and Towhee 14; Northern Parula Warbler 11;

Vesper Sparrow 10; Hermit Thrush, Tree Swallow, and Nighthawk 9; Chipping Sparrow, Chestnut-sided Warbler, and Dickcissel 8; Woodcock and Brown Thrasher 7; and Mourning Warbler, Prairie Warbler, Canada Warbler, and Bay-breasted Warbler 6 days behind schedule.

There were thus 53 species which were more than five days either too early or too late in their arrivals, or almost 33% of the species involved. No account is here taken of the Water Birds, because there is much less certainty that accurate records were made of their movements. It is worth noting that most of the species which arrived ahead of their schedule belonged to the earlier parts of the migration, and that about half of those which arrived behind schedule belonged to the late waves.

The largest warbler and thrush migration usually occurs about the middle of May, but this year the heaviest movement was on the 21st and 22nd of May, with many of them remaining until the first of June, due to chilly and rainy or cloudy weather.

Vegetation was as far advanced in the middle of April as it usually is in the middle of May, but apparently there was not a correspondingly early development of insect life, although there were considerable numbers of insects associated with the foliage. While this unseasonable advance of vegetation was clearly not a purely local phenomenon, since much the same sequence of weather had prevailed southward into the Gulf states, it could hardly be expected that the birds which normally reach the southern border of the United States about the middle of April would have felt the pull of the unseasonable conditions in the Lake Region, and hence would not keep up with the vegetation and development of insect life. This would account for the marked paucity of birds during the warmth of the first two weeks of April when conditions seemed to be unusually favorable for birds of the warbler type.

We have to sorrowfully record the absence of Chickadee and Carolina Wren. The woods seem comparatively cheerless without them. No reason can be assigned for the disappearance of the Chickadee, and none that is satisfactory for that of the Carolina Wren. On the other hand, there have come to the region during the migrations Gadwall, Golden Plover, Bewick's Wren, and Mockingbird. Of course the Gadwall is found in the immediate vicinity of lake Erie, but it was never before recorded for the Oberlin Water Works reservoir. There were two Mockingbirds, one of them in full song, and they are still with us. A ten-day war on the English Sparrow has resulted in the presence of more native birds in the village.

LYNDS JONES.

ANOTHER BLOW—MIGRATORY BIRD LAW HIT HARD.

The Chicago Daily Law Bulletin of date January 20th, 1915, contains the announcement that Judge Treiber of the United States District Court for the Eastern District of Arkansas, declared the Migratory Bird law, passed by congress on March 4th, 1913, invalid. The learned judge in his decision, states that while he recognizes the force of the contention of the Federal authorities that only by national legislation can the migrating birds of the country be preserved, yet he says that this is not a matter for the courts, but for the people by amending the constitution of the United States.

The decision was rendered in the case of United States vs. Shauver, and is reported in 214 Federal Reporter, page 154. In this decision, Judge Trieber quotes and discusses many decisions pro and con, but all of them are clearly in line with his decision in the Shauver case, and a careful examination and study of his honor's decision convinces one that it is sound and that an appeal to the Supreme Court of the United States would avail nothing.

Article 5 of the Constitution of the United States provides that the constitution may be amended whenever two-thirds of both the house and the senate shall deem it necessary and shall propose amendments to the constitution or upon the application of the legislatures of two-thirds of the several states, congress shall call a convention for proposing amendments, which amendments in either case shall be valid to all intents and purposes when ratified by the legislatures of three-fourths of the several states or by conventions in three-fourths thereof as the one or the other mode of ratification may be proposed by congress.

The friends of the birds should stir up the members of congress from their respective districts and the same methods should be used with the representatives and state senators in the different states, and as the law of March 4th, 1913, declared invalid by Judge Trieber was undoubtedly the result of the same kind of agitation, there ought to be no difficulty in having an amendment providing in substance that birds and animals *ferae natura* are by the constitution given to and declared to be the property of the United States, and in this way obviate the objection raised by Judge Trieber that nothing in the present United States constitution waives the common law right of the different states to all birds and animals *ferae natura*.

Most of the laws passed by the different states for the protection of game, contain in some part thereof, the statement that birds and animals *ferae natura* are the property of the state, but as this is merely declaratory of the common law, it has very little force ex-

cept to make written, that which was unwritten under the common law.

Prepared and submitted by Messrs. Sumner C. Palmer, Attorney, and Gerard Alan Abbott, investigator.

PUBLICATIONS RECEIVED.

Five papers by Arthur A. Allen, Ithaca, N. Y. From Bird-Lore: At Home with a Hell-Diver; On the Trail of the Evening Grosbeak. These are intimate studies of the species, profusely illustrated from photographs. The Paramo of Santa Isabel, from "The American Museum Journal," January, 1915, being an account of the author's experiences in this interesting region in South America, illustrated from photographs. Two from the Cornell Reading-Courses, Birds in their Relation to Agriculture. These papers are in furtherance of the commendable university extension work of the College of Agriculture of Cornell University. Other state universities might well introduce more of this sort of extension work in part repayment for the support given to these institution by the whole people in taxes.

U. S. Department of Agriculture publications: Some Common Birds Useful to the Farmer, by F. E. L. Beal, Farmer's Bulletin No. 630; Food of the Robins and Bluebirds of the United States, by F. E. L. Beal, Professional Paper No. 171; Preliminary Census of Birds of the United States, by Wells W. Cooke, No. 187; Bird Migration, by Wells W. Cooke, No. 185. These papers and many others are continued evidence that our government officials are not unmindful that the nation's welfare is bound up in the intelligence of the people who compose it.

Several papers from the pen of Henry Oldys, under the caption, "Current Items of Interest," published by the Audubon Society of the District of Columbia, deal with the general question of bird conservation.

A series of papers in the Outer's Book, by Dr. R. W. Shufeldt, "American Bob-whites and Quails," in the September, October, November, and December numbers. These papers deal with the descriptions of all of the species, with some life history notes.

Bird-Lore, August-September, 1914, to May-June, 1915.

Bluebird, September, 1914, to June, 1915.

Nature-Study Review, September, 1914, to May, 1915.

The Oregon Sportsman, September, 1914, to May, 1915.

The Condor, September-October, 1914, to May-June, 1915.

The Victorian Naturalist, September, 1914, to April, 1915.

The Guide to Nature, September, 1914, to May, 1915.

The Oriole, June and August, 1914.

Announcement

As I find it necessary to move my belongings to another locality, I'm endeavoring to make the task as light as possible. If any colleges, museums or individuals would be interested in acquiring certain specimens, I might arrange things to the mutual advantage of all parties concerned.

EDW. ARMSTRONG,
207 N. Michigan Ave. Chicago, Ill.

Wanted **Specimens of Passenger Pigeon**
Ectopistes migratorius. Mounted Specimens or Skins.
Address stating price, FIELD MUSEUM, CHICAGO.

The Collectors' Journal

An illustrated monthly magazine devoted to collectors of postage stamps. The leading exponent of stamp collecting which no collector can afford to be without.

Subscription Price, 50c per year.
Sample Copy, 5c.

H. L. LINDQUIST, Editor and Publisher.
700 East 40th St., Chicago, Ill.

We operate our own printing plant and are in position to do high grade commercial and publication work at moderate prices. Write us about your next job.

E. T. HADOVEC & COMPANY

POWERS BUILDING, CHICAGO

We have designed a beautiful little piece of inexpensive jewelry, consisting of an

Emblem for Members of the Wilson Club

This little Wilson's Warbler can be mounted on a stick-pin, bar-pin, fob, lapel button, or hat-pin. These may be had of the designer or Business Manager, Wilson Bulletin. We specialize in the manufacture of class pins, medals, class rings and fraternity pins.

E. T. HADOVEC & COMPANY

ATTENTION!

Museums, Educational Institutions and Collectors

I am prepared to mount or furnish mounted specimens of mammals, birds, reptiles and fish and to prepare or supply scientific skins and oological specimens.

Our life groups of the above are sought by those who recognize ability and accurateness of workmanship and the perfect condition of material furnished.

Descriptive matter relative to our methods, also references pertaining to our responsibility, will be furnished upon application.

Karl W. Kahmann

Work Rooms and Studio

2457 Lincoln Avenue, CHICAGO, ILL.

Glimpses of Wild Life

If you are in need of illustrations involving bird life or any of the vertebrates let me know your plans.

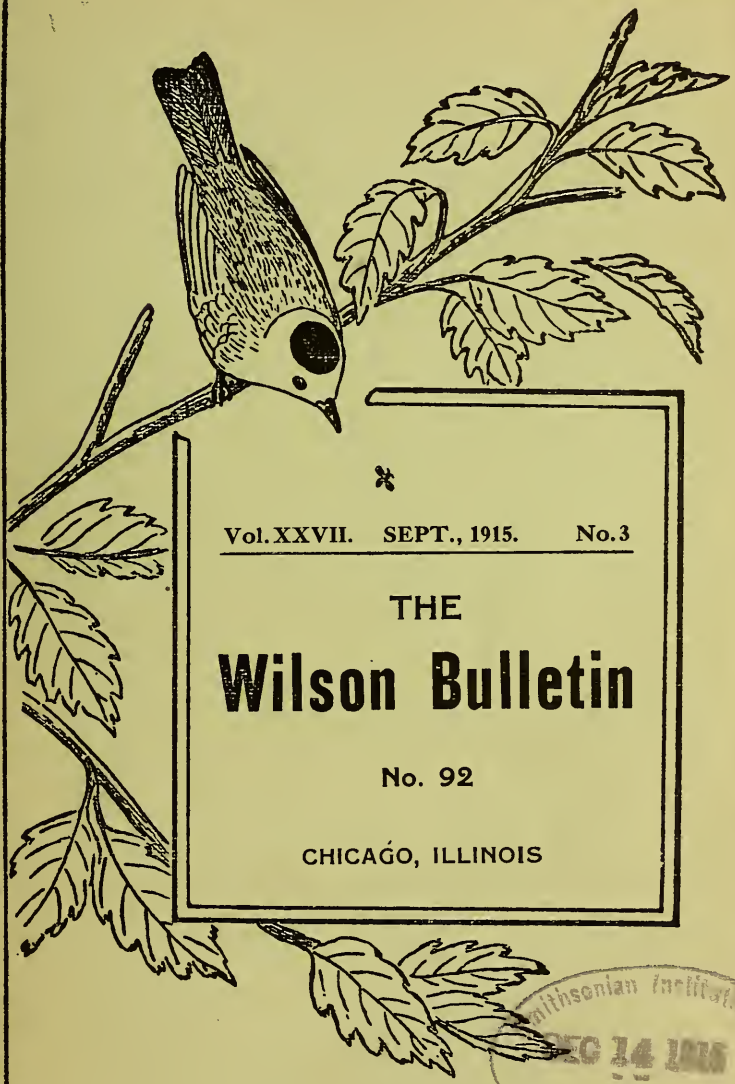
I have many unpublished sketches, drawings and paintings truly depicting the creatures of the air, land and water.

Poses and attitudes are characteristic of the species and should enhance the value of your articles.

KARL PLATH

Artist

3307 W. Congress St., Chicago, Ill.



Vol. XXVII. SEPT., 1915. No. 3

THE
Wilson Bulletin

No. 92

CHICAGO, ILLINOIS

Smithsonian Institution
DEC 14 1915
National Museum

WILSON ORNITHOLOGICAL CLUB

CONTENTS

The Rose-Breasted Grosbeak . . Ira N. Gabrielson 357

Birds by the Wayside . . . Althea R. Sherman 369

Owls . . . . . R. W. Shufeldt 393

Plainfield, N. J., Bird Census
W. DeW. Miller and Charles H. Rogers 403

Editorial 409

General Notes 410

THE WILSON BULLETIN

is published on the fifteenth of March, June, September, and December, by the Wilson Ornithological Club at Chicago, Ill., edited by Lynds Jones, Oberlin, Ohio.

Subscription: One Dollar a year, including postage, *strictly in advance.* Single numbers, 30 cents, unless they are "Special" numbers, when a special price is fixed. The Bulletin, including all "Special" numbers, is sent to all paid up members, either Active or Associate, after their election, it being understood that one dollar out of the annual dues paid by members is for the Bulletin.

Subscriptions may be addressed to P. B. Coffin, 3232 Groveland Avenue, Chicago, Ill.

Advertisements should be addressed to The Wilson Bulletin, 943 Marquette Bldg., Chicago, Ill. Terms will made known upon application.

All articles and communications intended for publication, and all publications and books for review, should be addressed to Lynds Jones, Oberlin, Ohio.

Articles of general interest relating to bird life are solicited. They should be in the hands of the editor not later than the fifteenth of the month preceding publication.

Authors of articles, other than "Field Notes," or short items of a general nature, will receive 25 bound reprints free of charge. Additional bound reprints of articles comprising 16 pages or less may be had at the following rates: 25 additional copies, $1.50; 50 additional copies, $2.00; 75 additional copies, $2.50.

Entered as Second Class Matter, May 21, 1914, at the Postoffice at Chicago, Ill., under the Act of March 3, 1879.

THE
WILSON BULLETIN
NO. 92.
A QUARTERLY JOURNAL OF ORNITHOLOGY
VOL. XXVII SEPTEMBER, 1915 NO. 3

OLD SERIES VOL. XXVII. NEW SERIES VOL. XXII.

FIELD OBSERVATIONS ON THE ROSE-BREASTED GROSBEAK.

BY IRA N. GABRIELSON..

Twice in the spring of 1914, we located a nest of the Rose-breasted Grosbeak (*Zamelodia ludoviciana*) with the purpose of studying the nesting habits; but each time we were disappointed, owing to the persistent activities of small boy egg collectors. For this reason we were delighted to find a nest conveniently located, which had escaped their notice, and safely hatched. This nest, which was discovered on June 25, contained two young about four or five days old. It was located about six feet from the ground in a small elm and was the usual flimsy affair. The blind was erected immediately. When we entered, we found the nest to be so high that we could not see into it. But cutting out a small section of the trunk and binding the top of the tree firmly to the stump left for that purpose, the nest was lowered to within three feet of the ground. It was otherwise left undisturbed, save for the cutting away of such small twigs as interfered with the view.

The blind was entered for observation work on June 26 at 5:20 a. m. From then until the morning of July 2, my wife and I alternated in the blind for as much time each day as possible. Raymond Jarvis spent part of one day in the blind and we were grateful to him for the relief. The first

table will show the amount of time spend in the blind each day and also the time spent by the grosbeaks in brooding.

TABLE I.

Date.	Time in blind.	Brooding.
June 26—5:20 A. M.-4:20 P. M.	11 hrs.	1 hr. 53 min.
June 27—7:15 A. M.-4:30 P. M.	9 hrs. 15 min.	3 hrs. 16 min.
June 28—5:15 A. M.-7:00 P. M.	13 hrs. 45 min.	6 hrs. 54 min.
June 29—9:00 A. M.-4:45 P. M.	7 hrs. 45 min.	1 hr. 49 min.
June 30—9:40 A. M.-4:20 P. M.	6 hrs. 40 min.	38 min.
July 1—5:45 A. M.-4:40 P. M.	10 hrs. 55 min.	1 hr. 19 min.
	59 hrs. 20 min.	15 hrs. 49 min.

The brooding time from the twenty-sixth to the twenty-ninth was distributed throughout the day in periods averaging about nine minutes each. During these days, with one exception, the brooding position was practically unchanged. The weather was moderate and we could remain in the blind without discomfort. This position (Fig. 1) was assumed to be as a protection from the cold. Once, on June 26, the female brooded through a rain storm. Her position was nearly the same as the one illustrated, the only noticeable difference being a more pronounced settling into the nest.

On June 29, during the heat of the day a change was noticed. The nestlings were restless and continually crowded from under her. She commenced at this time to stand in the bottom of the nest and spread her wings slightly. Fig. 2 illustrates this shading instinct at its highest development in this individual. It is very imperfect when compared with some birds of other species, although better than the average individual which has come to my notice. On some occasions the wings were slightly spread and the feathers of the head and back were perceptibly elevated, while at other times a barely noticeable spreading of the wings testified to an attempt to furnish the shade which the young needed. On the last two days the covering of the young by this method constituted the entire brooding practice. Only seven periods were recorded on these two days and they averaged almost 17 minutes each. As soon as the surrounding vegetation

shaded the nest the brooding ceased. The male took no part in the work, and only once or twice did he show any evidence of possessing this instinct. On these occasions he straddled the nest awkwardly with his body drawn into a bunch. His position afforded no protection to the nestlings and was never maintained long enough to be accurately timed.

METHOD OF FEEDING.

It has been stated that the Black-headed Grosbeak (*Zamelodia melanocephala*) feeds its young by regurgitation * and

Rose-breasted Grosbeak.
Fig. I.—♀ Brooding.

one would naturally expect that *ludoviciana* would do the same. We watched these birds carefully from a distance of three to five feet for a period of nearly sixty hours and did not see a single feeding that was clearly regurgitative.

Both the male and female took part in the feeding of the nestlings and their actions were exactly alike. On account of the large size of the beak the feeding act differed somewhat from that observed in other passerine birds. In other

* Food Habits of the Grosbeaks. McAtee. Bul. 32. Biological Survey. Pp. 75.

forms with which I am acquainted, the food is thrust into the nestling throat by the parent. With the grosbeaks this did not seem to be possible and the following method was used much of the time. In order to convey to the reader the picture of this process it will be necessary to explain that in the Grosbeak's bill the cutting edges of the mandibles (especially the upper one) are slightly turned inward toward the median line so that when the mandibles are brought together a shallow longitudinal depression is formed. The beak of the parent was brought into the nestling mouth in such a manner that the tip of its (the nestling's) mandibles are in this depression. When this was accomplished the parent began a slight movement of the mandibles as if chewing. The effect of this was to allow the morsel to slip down into the nestling mouth. As the nestlings became older this action was hastened by their action of closing the mandibles over the ends of the food projecting on each side of the beak. At times the morsel was carried into the mouth of the young bird in such a position as to lodge there. When this occurred the parent seized it, placed it crosswise of his or her beak and the entire process was repeated. Out of the 459 observed feedings 274 were of this nature. That is the food was projecting from the beak as they approached the nest, which was certain indication that regurgitation was not being practiced on these visits. The above process was almost invariably carried out even if it required considerable maneuvering on the part of the parents.

With these 274 feedings disposed of there remain 185 feedings, during which regurgitation might have been practiced. At first sight some of these feedings seemed to be of a regurgitative nature, but continued observation convinced us that nothing of the kind occurred during our study of this pair. During the first seven feedings nothing was visible in the parent's beak and this might have been taken as regurgitative feeding but for a chance observation. The nest was located in a small elm in the midst of a willow thicket and, on these willows the fruiting aments were not quite ripe.

They hung all around the nest, and while waiting for the parents to recover from their fright and commence feeding the nestlings, I noticed that they began feeding on these seeds. They seized an ament in their beaks and by a rapid motion of the mandibles shelled off the outer scales and cotton, retaining the seeds in their mouth. Suddenly the female, who had been gradually coming nearer the nest, shelled some of

Rose-breasted Grosbeak.
Fig. II.—♀ Shading the Young.

the seeds, hopped to the nest and fed one of the nestlings. This instantly raised the question, was that nestling fed by regurgitation? A close watch was kept for a repetition of the performance to see if any action of swallowing could be detected or any throat action, such as one might expect in regurgitative feeding, be noted. During the observations willow seeds were brought in this way eleven times and the seeds of an anemone (*Anemone canadensis*) once. We actually saw them pick these seeds and bring them to the nest. When they were feeding we many times saw them pick the seeds and swallow them and were close enough to readily detect this motion. The significant thing was that we could not de-

tect any swallowing action when the seeds were carried to the nest, nor could we detect any muscular acting of the throat, which would indicate regurgitation.

The second item in the food table is seeds which are recorded fifty-three times. This represents the number of feedings in which we were positive seeds were fed, but when the grosbeaks were not seen to gather them. They were secured out of sight of the blind and brought to the nest, where they were shelled and fed to the nestlings. Those recorded under the term unidentified were presumably largely seeds, but as we neither saw them garnered nor shelled we could not be positive. The significant thing about these feedings was this: no food was visible in the beak, and yet at a distance of three feet we could detect no regurgitative action of the muscles, but, on the contrary, we noted that the beak moved exactly as in the feeding of insect food. As we were close enough to see the parents swallow the lice and other small objects picked from the nest, it would seem that any regurgitative action could have been detected.*

It is possible that the grosbeaks feed by this method in the first day or two of the nestling period and it is also possible that such action as is described above would be called regurgitation by some writers. It does not seem proper to me, however, to call actions such as the carrying of berries in the throats by waxwings regurgitative, or to class them with the performance of a bittern or heron in feeding its young. In the case of the grosbeaks as we observed them there was even less reason for placing them in such a class.

Briefly, the facts on which we base our belief that the nestlings were not fed by regurgitation on the 185 feeding visits, when no food was visible in the beak, are these:—

* In so small a bird as the Ruby-throated Hummingbird (*Archilochus colubris*) Bradford Torry has described the regurgitative feeding as a "frightful looking act" (Chapman's Handbook of Birds. Pp. 242). This description certainly applies to all the birds which we have noted in this act, and it would seem that in the case of the grosbeak there would at least be action enough to be detected at so short a distance.

A. On 12 of these visits (11 with willow seeds and 1 with anemome) they were seen to pick the seeds, bring them to the nest and feed the nestlings without swallowing them.

B. On 53 visits they came to the nest with seeds in their mouths, shelled them and fed them to the nestlings.

C. On 120 visits the food was not visible at any time; but every feeding action was the same as on other visits.

D. At no time during the 459 feedings did we detect the slightest muscular action, such as might be expected in regurgitation.

Rose-breasted Grosbeak.
Fig. III.—♀ Inspecting the Nest.

One of the most interesting features of this method of feeding was the ease and dexterity with which the grosbeaks used their clumsy looking beaks in extracting the meats from the seeds. Although we watched them many times, we could not determine exactly how it was accomplished. The notch in the beak and the tongue played the important part in the work, which was carried on with such rapidity that a miniature shower of discarded material fell to the ground as they worked over a beak full of seeds.

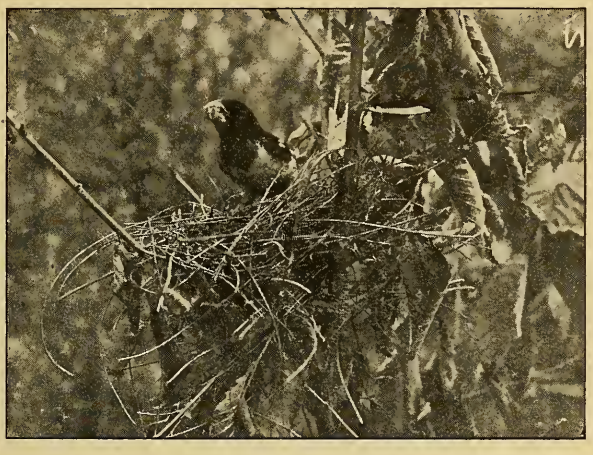
TABLE II *

FOOD	June 26	June 27	June 28	June 29	June 30	July 1	Variety of Nestling Food — Food of A: June 26	June 27	June 28	June 29	June 30	July 1	Total for A	Food of B: June 26	June 27	June 28	June 29	June 30	July 1	Total for B	Nestling fed not determ'd	Totals
Willow Seeds	5	1	...	3	2	...	4	1	...	3	1	...	9	1	...	...	2	...	...	3	1	11
Seeds	...	...	...	...	14	39	...	...	...	...	9	29	38	...	...	...	...	11	26	37	1	53
Anemone Seeds	...	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	1	...	1	...	1
Mulberries	...	...	...	2	...	3	...	...	...	...	...	2	2	...	...	...	2	...	1	3	...	5
Measuring Worms	8	16	4	9	5	6	7	11	3	1	2	3	27	1	5	1	8	...	3	18	...	45
Hairy Caterpillars	...	...	...	...	2	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...	...	2
Wireworms	2	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	1	...	2
Larvae	8	10	73	17	2	8	5	5	35	8	1	6	60	2	5	38	9	1	2	57	1	118
Large Larvae	3	12	7	7	13	...	3	8	4	3	5	...	23	...	4	3	4	8	...	19	...	42
Cabbage Butterfly	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1
Moths	...	...	11	2	...	...	...	...	6	...	...	...	6	...	...	5	2	...	...	7	...	13
Flies	4	...	...	...	...	2	2	...	...	...	...	1	3	2	...	...	...	...	1	3	...	6
May Flies	...	...	...	2	...	...	...	...	...	1	...	...	1	...	...	...	1	...	...	1	...	2
Crickets	...	...	...	5	...	...	...	...	...	1	...	...	1	...	...	...	4	...	...	4	...	5
Lady Beetles	...	...	...	2	6	...	...	...	...	1	5	...	6	...	...	...	1	1	...	2	...	8
Potato Beetles	...	...	...	...	...	4	...	...	...	...	...	2	2	...	...	...	...	...	2	2	...	4
Grasshoppers	...	...	...	...	...	10	...	...	...	...	...	6	6	...	...	...	...	...	4	4	...	10
Spiders	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	1	2	3	...	3
Animal Matter	...	...	2	1	...	...	...	...	..1	1	...	...	2	...	...	1	...	...	...	1	...	3
Unidentified	23	20	13	24	24	16	17	16	10	14	15	10	82	7	10	9	12	17	9	64	3	120
Beetles	1	1	1	...	2	...	1	...	1	...	1	...	3	...	1	...	...	1	...	2	...	5
Totals	54	61	111	74	69	90	40	42	33	60	42	59	276	14	25	57	45	41	50	232	6	459

* A few explanations of this table may be in order. The totals for the first six columns are given in the last column to the right. Reading from left to right the number of any item for A plus the number of that item for B is equal to the total in the right hand column except in the following instance: The total of the items, seeds, willow seeds, anemone seeds, and unidentified, represents the number of visits to the nest with that food material, and as both nestlings were often fed on each visit the total feedings for both exceeds the number of visits. Under the term animal matter is included feedings which were recognized as animal rather than vegetable, but not otherwise identified.

FEEDING.

The bulk of the determined insect food was largely divided into two groups, larvæ, and large larvæ. The terms are self-explanatory. Among the latter were several resembling tomato worms and, once or twice, we thought we could recognize partly grown cecropia larvæ. Among the former we occasionally recognized an army worm when it had to be withdrawn from the nestling mouth, but for the most part



Rose-breasted Grosbeak.
Fig. IV.—♂ Approaching with Food.

they were either too badly macerated or too well concealed in the beak of the parent to be identified. Geometrid larvæ were dangling from the twigs in abundance and probably many entered simply as larvæ belonged here. They were entered as measuring worms only when the parents were actually observed to secure them. Most birds, when they bring worms or larvæ, carry them crosswise in the tip of the beak and consequently almost the entire length is visible to the observer, but the present species carried them far back in the beak in such a manner as to render only the ends visible.

The three larval items total 205 out of the 459 feedings or 44.66% of the counted total; seeds (first three items in the table) were fed 65 times or 14.11%; unidentified forms 120 times or 26.14%; and a variety of insect forms 15.09%. Computing it in another way; vegetable food, including the mulberries, was 15.25%; insect food 58.61%; and unknown 26.14%. Only four potato bugs were fed and few grasshoppers, although the latter were abundant.

The grosbeaks confined their foraging to the small timber belt described in the Red-winged Blackbird paper.* The Red-

* The Red-winged Blackbird. Ira N. Gabrielson. Wilson Bulletin, June, 1915.

wing nest was not twenty feet away, but the parents never came into the timber. We had here two birds nesting on the line between two regions of plant growth, but each confining themselves to distinct areas. A circle drawn about a point between the two nests would have enclosed an area which would have been almost equally divided between the two species, as a hunting ground.

The distribution of the food to the nestlings was as nearly equal as could be expected, although A, the larger, received a greater part than B. It was a clear case of his overreaching B and getting more than his share, but the feedings came so often that B still received sufficient food. The table shows the daily distribution of food to the two nestlings and also the total received by each. Both the male and female took part in the feeding, but the latter was much more active, 283 visits out of 382 being credited to her.

SANITATION.

Table III. Disposition of the Excreta.

Date.	C. away	Dev.	C. away	Dev.	C. away	Dev.	Exc.
June 26	0	4	3	3	3	8	11
June 27	5	9	0	8	5	17	22
June 28	9	5	7	3	16	8	24
June 29	8	1	5	2	13	3	16
June 30	2	0	7	3	9	3	12
July 1	2	0	5	0	7	0	7
Totals	26	19	27	20	53	39	92

Table III shows the disposition of the excreta and also the number of times it was taken by each parent. This work was more equally distributed than that of feeding. In the early part of the study the sacs were largely devoured by the parents, but after the twenty-seventh the number so disposed of exhibited a tendency to decrease, and on the last day all were carried away.

MISCELLANEOUS.

The male was more devoted to his family than is usual in the individuals of his sex with which we have become acquainted. One of the parents was always at or near the nest and the male especially spent much time perched in a willow watching it. If neither were to be seen at the nest a glance around invariably revealed him on guard eight or ten feet

Rose-breasted Grosbeak.
Fig. V.—♀ Feeding.

above it. The female when on guard duty sat on the edge of the nest, but the male preferred the more distant perch.

The male spent much time in an effort to drive the male Red-wing away from his chosen perch on the other side of

the same tree and, while he generally succeeded in driving him off, the blackbird was usually back to his perch by the time the Grosbeak was settled comfortably at his nest. Once they united forces against a Bronzed Grackle and drove him away.

Only two visitors appeared directly at the nest: a Crested Flycatcher, to which they paid no attention; and a male Baltimore Oriole, which was quickly driven away by the female.

Rose-breasted Grosbeak.
Fig. VI.—♂ Feeding.

BIRDS BY THE WAYSIDE,

IN EGYPT AND NUBIA.

BY ALTHEA R. SHERMAN.

The traveler of today in Egypt is but one of its tens of thousands of annual visitors, who form a procession that can be traced back to Herodotus in the dim light of twenty-three hundred years ago. Full many of this visiting host have furnished to the world most accurate descriptions and pictorial representations, whereby the minds of all may be well-stored with mental conceptions of what they are to see in a land slow to undergo changes. Probably in recent years the changes are coming more rapidly, where the waters of the Nile have been held back, where archæologists are uncovering treasures long hidden in the sands, and where some forms of life are apparently vanishing. Such disappearance seems to me to be the case of the Buffed-backed Heron (*Ardeola russata*). Expecting to see the species in large numbers: flocks of them following the plow or industriously picking flies from the cattle in the fields, I saw barely three individuals on three widely separated sand-bars in the Nile, notwithstanding that for them a keen lookout was kept daily. Charles Whymper in his "Egyptian Birds," published in 1909, writes that this Heron is decreasing in numbers, having found it abundant in the Delta twenty-five years before. A similar diminution may be strongly suspected in several other species.

Certain forms of life, that were associated for ages with the Egyptian and Nubian Nile, are no longer seen there: such were the lotus, the papyrus, and the bulrush. From ancient records we learn that formerly the hippopotamus and the crocodile came down the river as far as Memphis. Sixty years ago occasionally a live crocodile might have been found as far north as Kom Ombos, and forty years ago some still lingered about the Second Cataract. But the naturalist or sportsman of the present day bent on seeing the crocodile in its native haunts must seek it to the south of Khartoum.

Copyright by Althea R. Sherman, 1915.

While some living species are fast vanishing the dead remain, and the visitor of today may not only look on the lifeless forms of once masterful Pharaohs, but also on many of the stupendous monuments they reared. One wonder of Egypt is, that despite the lapse of ages and countless hordes of despoilers so much remains as found and described by Herodotus, Diodorus, and Strabo. So thoroughly have modern explorers and travelers explained and described everything that nothing of the unexpected is left for us. Recently Charles Whymper has written most entertainingly of some of the well-known species of birds, and in 1872 Captain G. E. Shelley (a nephew of the poet Shelley) published a comprehensive handbook of the 351 species of birds that had been identified in Egypt. Since then a few more species have been added to the list.

Evidences of the veneration paid to animals, and more especially to birds by the ancient Egyptian constantly attract attention. Even in their hieroglyphic signs the forms of birds outnumber those of any other class of animals: there being twenty outlines of birds to twelve of quadrupeds, four of reptiles, three of fishes, two of insects, and one scorpion. Of the bird outlines a number are of the nondescript sort, while nine of them easily suggest the eagle, heron, ibis, vulture, goose, duck, hawk, owl, and plover families. These on the walls always appear in the same stereotyped forms, and they were probably outlined there by means of patterns.

The time spent by me in Egypt, amounting to five weeks altogether, included the whole of February, four days in March, and three days in the previous December. The last named period occurred when I was on my way to India. The routes traversed were the common ones; which mean the Nile journey from Alexandria to the Second Cataract, a distance a trifle short of a thousand miles, and the journey by train from Cairo to Port Said, thence by steamer through the Suez Canal down to the Red Sea, and the return trips over the same routes.

Three mornings were spent at Port Said, once said to be one

of the dreariest places on earth. It did not prove wildly attractive on any of these occasions. The mornings were those of December 24, February 2, and March 4. On the first of these, after having been up all night and chilled to the marrow, although clad in heavy winter clothing, I walked the steamer's deck for four hours in an attempt to become comfortably warm. Meanwhile the rays of the crescent moon were paled by the light of advancing dawn. Soon there flew overhead a Parasitic Kite and a little later seven Hooded Crows; a Gull was seen and one small bird in some trees that grew near the water's edge. These were the only birds seen about Port Said that day. On March 4, during a long ride to the south of the town, not a bird was seen. Gulls were fairly numerous over the water of the harbor, and on the shores at the back of the place were a few shore birds, among which Green Sandpipers and Ringed Plovers were recognized. Special mention of the scarcity of birds about Port Said is made, because of the very great abundance of them to be found a few miles away on Lake Menzaleh. This lake, averaging about forty miles in length by fifteen in breadth, is the winter home of myriads of water-fowl. Fortunately for travelers excellent views of these birds may be had both from the car windows and from the steamer's decks. Nowhere, not even in the exceedingly populous bird colonies of the Orkney and the Shetland Islands, were so many birds seen by me. Instinctively one begins to fear that it is too fine a paradise to last in this greedy age; and fears are confirmed by statements found in guidebooks and newspapers. Operations are already on foot for draining the lake.

Whoever enjoys jogging along after a horse traveling at the rate of four miles per hour, thus enabling him to scan well all the birds by the wayside, would for the same reason enjoy traveling on the Suez Canal. A stone's throw away there may be birds sitting on the telegraph wires. The boat seems to be drifting through the people's front yards, in which they are pursuing their daily tasks; or here and there, if the hour is an early one, black-robed people may be seen

driving their flocks of sheep and goats toward bleak stretches of land that show no signs of herbage, and farther away the caravans of camels are taking up their daily march. All is of interest; but the truly wonderful sights come while passing Lake Menzaleh. Embankments only a few rods in width separate the waters of the canal from those of the lake. Late in the afternoon of December 24 this portion of the voyage was taken, and a morning view was secured from the car windows on February 2. The other two passings were made in the night, to my great regret. Among the first birds to be seen were White Pelicans in groups, ranging in numbers from four to nearly or quite a hundred. These were near enough for identification, but it was impossible to say what were the large white birds in the distance that literally covered the mud flats until they looked as if covered with snow. There must have been acres that were thus occupied. Equally impossible was it to tell what species of ducks and of shorebirds were crossing the sky, "like a cloud of smoke," as one passenger described the sight. Common Heron could be identified, and in places Flamingoes. The latter in one place standing in a very long line looked like a row of pink rushes beautifully reflected in the water. Various outlines could be distinguished of birds too distant for a stranger to feel positive regarding their identification. Amid such surroundings the sun, glowing like a ball of fire, appeared to drop into the lake. The afterglow on sky and water made a panorama of beauty with its manifold shades and tints of color that was well worthy of several pages of print or yards of canvas.

Aside from the multitudes seen on Lake Menzaleh the journeys on the Suez routes did not yield many bird sights. Small birds too far away to distinguish their markings were seen, also members of the *Corvidae* that must have belonged to some Raven species. There were seen a few Black-headed Gulls (*Larus ridibundus*) on each of the three visits to the Canal. In March the head of one of these birds was beginning to show dark feathers. (On the previous day at Alexandria the changing color on crowns could be detected on numerous of

these Gulls.) A few times the Common Heron (*Ardea cinerea*) was seen, once an Osprey (*Pandion haliaëtus*), and while still in the Suez Canal a Coot swam by our steamer's side. About the Bitter Lakes were many Cormorants (*Phalacrocorax carbo*). Many of these were on the banks, and others were perched on the red frames that supported the beacon lights marking the course for the vessels. Every frame seemed to have its contingent; some having no more than four to seven birds, while others had from thirty to forty of them. A month later similar frames in the harbors of Alexandria presented like decorations. The largest number of Cormorants counted on one frame was seventy-six. On the Nile this species was seen more frequently than the books led me to expect. They were noted on eight days. The largest flock, numbering fifty-eight, was on a sand-bar near Gebel Abu Fedah. This mountain is said to be one of their breeding places. The nearly vertical faces of its cliffs stretch along the river's edge for several miles. The species was seen at both the First and the Second Cataracts. About the latter, on the six-mile trip by felucca from Wadi Halfa to the Rock of Abusir, a single Cormorant was seen in several places.

For one desirous of seeing birds the window of a moving train is usually a poor place, which proved true in the journeys between Alexandria and Cairo; also on those between Cairo and Port Said, and the short ones between Aswan and Shellal. An exception to the rule was the ride of February 27 from Assiut to Cairo. For long distances the railway track ran quite near an irrigation canal, whose proximity probably accounted for the large number of small birds that so often took flight. Some of the Little Green Bee-eaters (*Merops viridis*) frequently could be recognized among the birds a-wing, while others retained their positions on the telegraph wires as the train passed. In all several hundred of these were seen. This was my last meeting with the species, a few of which were met with in Egypt on five other days, making in all the same number of days for it there, that it was seen in India.

The other modes of travel in Egypt and Nubia were by boat, carriage, sand-cart and donkey-back, none of which yielded the satisfaction in bird viewing that was experienced on the few occasions when I could go on foot and alone. Since all bird observing was incidental to general sight-seeing nothing more was seen than every tourist may see. On the other hand I fell far short of seeing the wonders reported by some trippers who, after a month spent on the Nile, write of seeing certain species in abundance that Shelley appears never to have seen, but credits them to Egypt on the authority of others. After excepting the marvelous numbers of birds about Lake Menzaleh it can be said that the birds on the rest of the Egyptian trip were far less abundant than they were in India, and not equal to the numbers I found in southern California during the previous winter.

The late Crown Prince Rudolph of Austria related hunting experiences that had a truly regal flavor to them: such as that of "beating" the garden of the Khedive at Heliopolis, where he killed a jackal, and another man killed a fairly large she-wolf. Better still was the hunt among the Pyramids of Gizeh, of which he wrote, "we got some Arabs to go up the second Pyramid and drive down the jackals which it harbors. We were, however, badly posted; so a couple of jackals broke through unhurt and skurried off into the boundless waste." The trustworthy book of Captain Shelley states that the Lanner Falcon (*Falco lanarius*), the Red-naped Falcon (*Falco Babylonicus*), and the Egyptian Eagle Owl (*Bubo ascalaphus*) breed annually on the Pyramids.

The itinerary of the ordinary traveler includes no hunting expedition to the Great Pyramids; instead a very commonplace donkey-back ride around about them. On my visit to them there were seen White Wagtails and Kites. No Eagle Owls were seen there or elsewhere except in cages in the Cairo Zoölogical Gardens. One cage was placarded as containing an American Eagle Owl. The bird of wisdom in it had a decidedly familiar appearance, and I am not absolutely certain that it did not give me a knowing, one-eyed wink, such

as any true American might give another in like circumstances, as dumfounded I reflected that the A. O. U. Check-List made no mention of Eagle Owls. Another glance at the placard went farther and discovered *Bubo virginianus,* thus clearing away the mystery. This was the beginning of finding our birds renamed in foreign lands, sometimes with freakish results exemplified by our Bluebird labeled as "Blue Robin." No doubt it irks the European to hear us call the House Sparrow "the English Sparrow" — one venture at least toward getting even in the renaming business.

There is no need that a learned ornithologist, with his specimens side by side, should point out that there are differences between the Hooded Crow (*Corvus cornix*) and the Indian House Crow (*Corvus splendens*), between the Parasitic Kite (*Milvus ægyptus*) and the common Pariah Kite (*Milvus govinda*), for good binoculars show quite plainly that the plumages of the African birds are not so dusky as those of their Indian cousins. The case of the Egyptian Vulture (*Neophron percnopterus*) is not so plain. It bears the same scientific name as does the White Scavenger Vulture. If there be differences in plumage and habits they failed to reveal themselves to the wayside observer. As it inhabits other countries on the Mediterranean as well as in Africa the latter name does appear more appropriate.

For twenty-six days in February, on a similar trip up the Nile and return, another person might make a better record of the birds seen; however, I did the best I could, yet on no day saw more than twenty-four species, the general average being thirteen, and the smallest number four. When we remember that part of the journey was in the tropics and that the northward movement for some of the birds had begun, then recall data given in Bird-Lore's Christmas Census, this Nile record appears very poor. There were but four days when a score or more of species were seen; the first of these days we spent at Edfou and up the river to Kom Ombos; the others were February 24, 25 and 26, and were spent at Thebes and Luxor and down the river to Abydos. Longer

trips on shore were taken than on other days, yet for the three days combined the total number of species seen was only thirty-five. The poorest day was in Nubia, when the daylight run of our steamer was from Wadi Halfa to Korosko; the five individual birds seen that day were two Turtledoves, a Raven, an Egyptian Vulture, and a Parasitic Kite. This Kite is worthy of special mention, as it and its mate were the only Kites seen in Nubia. On the passage upstream they were seen visiting a precipitous cliff that overhung the river a few miles above Derr, their behavior indicating that they had a nest there, and one was found there as we returned. The day under consideration was the only one, either in Egypt or Nubia, when the White Wagtail failed to be seen.

The Parasitic Kite was fairly abundant along the Nile to the First Cataract, above which the only birds seen were those near Derr. It was seen above the water most frequently and at the boat-landing, where, like Gulls, it snatched from the water the food thrown overboard. My records for the Hooded Crow stop abruptly at the First Cataract. The seemingly correct explanation for this is that the river higher up in its present condition offers no inducement to Kites and Crows in their role of scavengers. The only representative of the Corvus family seen between the two cataracts were a few Brown-necked Ravens (*Corvus umbrinus*), a species partial to deserts and rocky districts.

It was at Wadi Halfa, in the Sudan, that the largest numbers of Egyptian Vultures were seen in numerous small groups. In all, eighty-eight were counted, most of them on one walk of about a mile into the desert back of the town, where the apparent attractions were the dumping grounds for refuse matter. This species was seen every day in Nubia, and on a trifle more than half of the days in Egypt. Its non-appearance near the coast was probably due to its preference for a drier climate, such as is found farther in the interior. The Black Vulture (*Vultus monarchus*) was seen on two occasions, and the Griffon Vulture (*Gyps fulvus*) on

four. Once both species were together, there being two birds of the former species and twenty-one of the latter. They were sunning themselves on a sand-bar, their enormous wings spread out in characteristic fashion.

On the Egyptian Nile the Common Heron (*Ardea cinerea*) was seen on fourteen days, the maximum for one day being one hundred and six individuals, forty-two of which were on one sand-bar. They were usually some distance from our boat, and passengers seeking information from a dragoman were told that they were Storks. This not from a desire to mislead, but because he like others (who should know better) was mistaken in the identity. We were too early for the migration of the Storks, which is said to occur in March and April. I saw the White Stork (*Ciconia alba*) but once; they were in a flock of less than a score.

The Night Heron (*Nycticorax griseus*) was seen by me in the Cairo Zoölogical Gardens, where seventeen of the species were counted in one tree. While looking at them and wishing for some one who could give trustworthy information, a party arrived that was conducted by two officials of the Gardens, and it was my good fortune to learn from one of them, the distinguished ornithologist, Mr. M. J. Nicoll, that the estimate for the Night Heron then frequenting the Gardens was upward of a hundred, and the estimate for the wild Ducks was more than a thousand. Among the latter were many Shovellers and a smaller number of Teal. From the Nile boats Ducks in small numbers were seen in the distance on fourteen days. Other species seen at liberty and in abundance in the Cairo Zoölogical Gardens were Parrots and Egyptian Turtledoves.

The only representative of the Alcedinidæ seen in Africa was the Black and White Kingfisher (*Ceryle rudis*), called the Pied Kingfisher by some authors. A half dozen of the species were the most that were seen on a single day, but they appeared on half the days spent on the Egyptian Nile, and were not seen in Nubia. At times the steamers ran quite near the high banks, and on one occasion two of these King-

fishers were seen going in and out of a hole in a bank where excavations for a nest seemed to be under way.

Generally wherever the Kingfisher was noted over the river there would be met on shore its near relative, the Hoopoe (*Upupa epopa*). One Hoopoe, however, was seen in Nubia, while we were passing a very attractive green island south of Derr. Although an inch and a half longer than the Indian Hoopoe the difference between the two species is not apparent to the wayside observer. Shelley says that the Hoopoe breeds in Egypt. My story is not offered in proof of this, but rather as illustration that boys are much the same the world over. While at Luxor I left the steamer before breakfast each morning except one, and took a walk southward from the town. There a native boy about twelve years old was met, who followed about, telling me that he attended the American Mission School; that he knew Mahmoud Ahmed, our head dragoman on the S. S. *Arabia,* and various other items of personal interest, but not a word was said about birds, though he could see my frequent use of binoculars. On the day of our visit to the Valley of the Tombs the walk was postponed until late in the afternoon, but the boy was waiting for me, anxious to sell a nest of young birds three or four days old. He said they were Hoopoes. He was obdurate against returning the nestlings to the place where he found them, so he received nothing more than an Audubon-style lecture on the evils of nest-robbing.

Sand-bars in the Nile offer enticing resting-places for the water-fowl, the shore-birds, and for the boats that attempt to navigate its waters. If a tourist steamer refuses to be coaxed, cajoled, pushed or pried from some well-beloved sand-bank, where it has rested serenely for two or three days, the traveler must suffer loss of time on shore; but when the steamer "rests" no longer than one day the time may be made up by running faster, later at night, and earlier in the morning; for the Nile boat's schedule seems to partake more of the characteristics of rubber than of castiron, inasmuch as it is flexible and elastic as well as compressible. It ap-

pears to have been made with a weather-eye out for sand-bars, to avoid which the boats tie up at night at certain landing-places. The longest period that we "were stuck" on a bar was twenty-seven hours; and I, avidly covetous for every possible minute ashore, was all that time profoundly thankful that I was not on shore at Assiut awaiting the boat, where for eleven weeks I had expected that I should join the party with which I was to travel for two months. By a stroke of great good luck for me the time for the run between Bombay and Port Said had been shortened by one day, which enabled me to reach Cairo in time to join the party there. The component parts of that party had long been a matter for conjecture. Our conductor was a tall, broad-shouldered Italian, whose gray hat with a black band, visible at the front like the white plume on the helmet of Navarre, led us on through surging crowds from port to port of several Oriental countries. As for the rest of the party — the months were February and March, not the season of our American Thanksgiving, yet Miss Smith, the other unattended woman, and I held many a thanksgiving meeting to give thanks because of the congenial qualities of the rest of the party.

Twenty-seven hours on a sand-bar before a sister ship comes down and drags off the boat may be spent in various ways: there may be the watching of the faithful though fruitless attempt of the crew to get the steamer afloat, or the successful efforts of the crews of smaller crafts, in which the lifting power of broad Nubian backs applied to the underside of the boat, may play an important part. Or there may be by the river's edge the dreary sight of a shadoof in operation, requiring, if the bank be high, its human quota of six men to lift a pail of water to the thirsty land above. But every place may not furnish a strange bird perched on the mud column of an abandoned shadoof. Such a mud pillar stood near our halting place and the bird that frequently came to it answered to the description of the female Pale-chested Harrier (*Circus pallidus*), the only individual of that species seen by me.

Who shall decide which was the Hawk sacred to the ancient Egyptians, the Sparrow Hawk (*Accipiter nisus*) or the Kestrel (*Falco tinnunculus*)? For my part I was not always sure which of these small Hawks I was looking at against the dazzling sky; but when there was advantage of near views the Kestrel was the species more frequently seen. A half dozen or more of them would be on the wing most of the time over the larger temples, but there was no means of estimating the number of those that remained perched in the manifold nooks afforded by the ruins.

Because my second visit to the temple at Medinet-Abu was made in advance of the other visitors a view was obtained of a small Owl, halted in its chase after Sparrows. It retired to a niche prepared for it by the wise precaution of Rameses III. That monarch realizing how easily many of his forefathers had stolen the monuments of their predecessors resolved to forestall this thieving propensity in his descendants by making the job too hard for them in his temple at Medinet-Abu. This was done by cutting the hieroglyphics very deep. The depth of some will admit the hand quite to the wrist, a measurement of fully seven inches. There are many hundred of these holes in the walls. It was in the Second Court of the temple that the startled Owl sought refuge in the last character in the cartouche of Rameses III, that is cut into the south wall next to the cornice, and nearest the southwest corner. Having slipped into this recess, admirable for small Owls, it turned, watched me for a time, then slept. An hour later it sat there while Ibrahim Khalil Ghaleb, our Syrian dragoman from Mount Lebanon, delivered his lecture. Amid this multiplicity of detail it is hoped that a certain omission will not be detected; that no one will notice that I am unable to tell whether this small Owl was a Southern Little Owl (*Athene meridionalis*) or a Little Owl (*Athene noctua*) or *Athene glaux*.

The source of the food supply for the small Hawks and Owls is very apparent, but whence comes the food for the Sparrow themselves in the desert surroundings of such tem-

ples as those at Medinet-Abu and Wadi Sabua? In the far-away days of Moses no mention is made of *Passer domesticus* among the zoölogical plagues of Egypt, hence we surmise that this plague is of more recent origin. While speaking of plagues it may be well to advert to the theory recently advanced by a scientist, (whose name cannot be recalled,) that the cat became sacred to the ancient Egyptians, because it was observed that where cats were plentiful the people were spared the ravages of the bubonic plague. Instead of an abatement of the plague of flies, even to the last individual, their present abundance would suggest that all were religiously preserved, and that all had been breeding, according to the law of its kind, ever since. Having flies on him does not appear to trouble the modern Egyptian; possibly his face would feel immodestly bare without at least a dozen flies covering it. This pest swarmed about the temples, even about those at a distance from human habitations; so also did the House Sparrow with its hateful yelpings.

In the House Sparrow of Egypt Dr. John C. Phillips has detected sufficient variation from the type form to entitle it to the distinction of a subspecies, and has named it *Passer domesticus chephreni*. Thus to all our other troubles with this villian we have the additional trouble of subspecies, such as *Passer domesticus chephreni, Passer domesticus niloticus, Passer domesticus biblicus,* and *Passer domesticus indicus*. (Note the last syllable in each name!) To the ordinary tourist in their general appearance, their behavior, their indecent clamorings, and their other thoroughly objectionable qualities, these subspecies present no differences from *Passer domesticus*, and it seems that we might save a deal of bother by calling him and his whole tribe simply and plainly "the cuss."

My stay in Spain was entirely too brief to admit of observations on the character at home of the Spanish Sparrow (*Passer hispaniolensis*); but when met abroad his behavior was that of a perfect gentleman. The first meeting with this species in Egypt was just beyond the mud houses of Den-

derah, where a flock was quietly feeding among piles of doura stalks, and the conduct of these birds was in marked contrast with that of House Sparrows, which were hurling vituperations from their vantage places on the mud walls.

A little beyond the Sparrows were the first Blue-throated Warblers (*Cyanecula suecica*) seen by me. That was a glorious morning and held other charms aside from the first meetings with interesting birds. The temperature was more comfortable, it having risen to 50°, which was four and six degrees warmer than on previous mornings; the air was fresh, and the surface of the river shone like burnished silver. By rising at the first streak of dawn, omitting breakfast, and having my donkey boy follow with his animal for the return ride, I was able to enjoy the singing birds and the walk of a mile or more to the temple of Denderah in advance of the shouting, dust-raising crowd.

The schedule for the Nile boats, sagaciously planned after the fashion of a feast that offers the more dainty viands toward its close, reserved the visit to Abydos for the return journey, so it came about that the most enjoyable trips to the temples were the first (which was to Denderah) and the last, to Abydos. The roads to both lay between well cultivated fields and afforded the best opportunities I had for seeing the field birds. Baliana, the Nile port of disembarkation for Abydos, was reached about four o'clock in the afternoon of February 25, and the rest of the day was given to walks in the environs of that village. On the following morning the ride by carriage over fairly good roads to the ruins of Abydos presented various interesting features aside from those connected with avian life and death. All along the route small boys, armed with slings, were shooting at the birds. Very likely their slings differed slightly, if at all, from that used by the lad David, son of Jesse; and it is safe to argue that his skill was acquired by practice in shooting at birds. The birds seen most frequently that day in the order of their relative abundance were Crested Larks, White Wagtails,

Grey-headed Yellow Wagtails, Little Green Bee-eaters, and Hoopoes.

Larklike notes borne to the stranger's ears by some morning breeze may be his first introduction to the Crested Lark (*Galerita cristata*). The singer is easily found: a brownish bird slightly smaller than our members of the Alaudidæ family, also less distinguished in appearance in spite of his crest. Much tamer than the Prairie Horned Lark he will keep to a race along the roadway until nearly under foot, and appears better content to sing from no greater eminence than a clod than does his American cousin. This species appeared to be the most abundant and evenly distributed of Egypt's field birds. Sometimes its cheerful song was heard on the river when the steamer ran close to the shore. Although the Desert Lark (*Ammomanes lusitana*) abounds in Egypt it was not met by me until we reached Abu Simbel in Nubia, where a few individuals were seen; also on subsequent days.

The bird that was seen almost everywhere and on every day except one, was the White Wagtail (*Motacilla alba*). No place apparently was too dry and forbidding for its thorough searchings: railway tracks, roofs of houses and of steamers, bottoms of row-boats, river banks, and rubbish heaps all claimed its careful attention. Seemingly the northward migration for the White Wagtail had begun the last of February, when it was met in large numbers in the same desert spot back of Wadi Halfa, in which the Egyptian Vulture was found so abundant. The Wagtails were constantly changing places, rendering an exact count of them impossible, but their number there must have equaled one hundred and fifty. The thought did not then occur that later in the year I might meet some of these same birds three thousand miles to the north of that place, yet subsequent experiences indicated that such a meeting was not in the least improbable. Most unexpected meetings await the tourist on the highways of travel; of this class was the encounter with our own American bird, the Turkey; several of these domesti-

cated birds were strutting up and down the river front at Wadi Halfa, when we made our first landing there.

The Grey-headed Yellow Wagtail (*Budytes flava*) was identified in but two localities, which were along the road between Baliana and Abydos and on the plain of Thebes in the neighborhood of the Colossi of Memnon. All about these giant statues the land was green with crops of grain, in which the field birds made their home. There, under the shadow of these vast monuments three thousand generations of birds have built their nests and reared their broods, and a hundred generations of men have plowed, planted, and harvested the surrounding acres, while overhead circled untold numbers of Swallows, Swifts and Martins. Dynasties waxed strong, then perished; nearly all the known history of the world has been made, the poetry, art, inventions have been created, since those days wherein Amenophis III watched the erection of his famous Colossi. When for him there was the same smile on the face of nature, the same lilt in the song of the Crested Lark, the same flash of colors in the flight of the Grey-headed Yellow Wagtail that greet us today in the Valley of the Nile.

It is to be hoped that the wayside stranger, dependent on binoculars for identifications, will not be expected to speak confidently as to which species of Martins and Swifts were seen almost daily and frequently in large numbers along the Nile. In the matter of Swallows the task is easier: The Swallow (*Hirundo rustica*) — or its allied form that occurs in Egypt — was seen but a few times, its creamy underparts easily distinguishing it from the Egyptian Swallow (*Hirundo savignii*), whose underparts are reddish-brown. The latter was a very abundant species and was seen daily in Egypt, but not once in Nubia. In its choice of nest-site it resembles our Barn Swallow, and lacking the barn it builds the nest inside the mud hut of a native. The Pale Crag-Swallow (*Cotyle obsoleta*). I believe, was identified in several localities and was the only species found in the Valley of the Tombs of Kings and Queens. As we came out from the tombs of

Amenophis II, Seti I, and those of other Pharaohs, the Pale Crag-Swallows were flying back and forth in the narrow valley, as beyond doubt their ancestors have done through all the ages since these mighty "Kings of the South and North" were laid to rest in their wonderful rock-hewn tombs.

Warbler identification in North America is attended with puzzles and perplexities, but when our Warblers are set over against the Warblers of the Old World they appear on the whole to be brighter in colors and easier to name. Let one read the handbook description of Old World Warblers and he will feel their lack of salient points of difference. Let him examine museum specimens and he feels the same lack, as he feels it also in the field. The difficulties to be surmounted in identification will be appreciated when it is known that to a dearth of prominent markings there is added brevity in the glimpses attainable of the birds as they fly from one bean-stalk to another, or show themselves momentarily in the garden patches, for it was in such places, not in trees, that I found them, and felt reasonably confident of my identifications in the cases of the Fantail, Black-headed, Chiffchaff, and Blue-throated Warbler.

Perhaps the most winsome of the birds seen on the Nile trip were the Chats. The three species met were the Desert Chat (*Saxicola deserti*), the White-rumped Chat (*Saxicola leucophygia*) and a Black-eared Chat (either *Saxicola aurita* or *Saxicola amphileuca*). The meetings with all of them were in the southern stages of the journey on the border of Nubia and in the Sudan. Several of the White-rumped Chats were seen in the desert waste at the foot of the Rock of Abusir, where their dainty motions and showy dress contrasted strangely with their rugged surroundings. The Chat with black ear-coverts answered the description of *S. aurita*, though *S. amphileuca* seems to be the common form of that region.

A grove of palm-trees at Aswan looked inviting from the steamer's deck. To reach it was a long before-breakfast walk across the sands; when reached the palm-trees were

destitute of bird life except a couple of Turtledoves. Thereafter this was the usual experience with the palm-trees, not in them, but in species of acacia — the sont and the lebbek — and in tamarisk trees were the birds found. Such trees lined a street occupied by Europeans, in whose yards were trees, shrubs, grass-plats, together with blooming roses and oleanders. In one of the sont trees was found a Masked Shrike (*Lanius nubicus*), and in a nearby tree were two more of the same species. They were handsome fellows: their white underparts were bordered by bright rufous on sides of neck and breast; and their upperparts were blue-black trimmed here and there with creamy white and gray. The only other species of *Laniidæ* seen in Africa was the Pallid Shrike (*Lanius lahtora*), which bears considerable resemblance to our Shrikes.

Although the Egyptian Turtledove (*Turtur senagalensis*) is an abundant species and said to occur wherever there are palm-trees it was not seen every day. And in abundance the semi-domesticated Rock Doves and the Pigeons failed to meet expectations.

Many shorebirds were seen along the Nile too far away for identification, but a few opportunities for seeing some of them close at hand were afforded, and at such times there were seen some of the Ringed Plovers, the Green Sandpiper (*Totanus ochropus*), the Black-headed Plover (*Pluvianus ægyptius*), and the Spur-winged Plover (*Hoplopterus spinosus*). Great interest attaches to the last two species named, because of their alliance with the crocodile. The story of these social relations is one of the oldest bird stories in the world. Told first by Herodotus about twenty-three hundred years ago, it has been reaffirmed by many witnesses and denied by very many more skeptics. Those claiming that it is a true story have wrangled over various points, including these: whether the birds actually enter the crocodile's mouth or merely skirmish on the outside; whether the prizes sought by the birds were the fragments of flesh adhering to the reptile's teeth, or leeches inside the mouth, as stated by Hero-

dotus; or flies among which was the dangerous tsetse fly. Another point controverted is whether the Plover ally belongs to the Black-headed or the Spur-winged species, few people seeming to realize that this habit may be common to both species, as Mr. John Lea has suggested in "Romances of Bird Life." Since the crocodile still survives in the upper reaches of the Nile there is offered brilliant opportunities for the ambitious young man with the camera, who shall secure for us moving pictures of the Plovers at work cleaning the saurian's teeth. This is especially desirable because of the skepticism still prevailing in spite of John Lea's array of evidences. Beginning with the account given by Herodotus he quotes the testimony of several travelers in the more recent centuries and concludes with an account by Mr. John M. Cook, that was published in the *Ibis*. He with another man, aided by field glasses, watched a Spur-winged Plover enter the mouth of a crocodile, but the distance was too great for them to discern what the bird did. Thus the field for investigation remains wide-open for the man with a camera. Ziczac is the name by which the crocodile's friend is known to the Arabs. On our Nile journey we traveled on four steamers, so came under the guidance of nine different dragomans, only one of whom pointed out to us the Ziczac, carved on the temple walls, and repeated the story that is familiar to the natives. As given by him there was an admixture of the phenix fable with the well known narrative.

All of the party that went by the small boat to the Rock of Abusir were agreed that it was one of the most delightful excursions of the Nile trip. In addition to other pleasures it furnished several views of the Egyptian Goose (*Chenalopex ægyptiacus*), and some of these birds were near enough for us to enjoy their handsomely colored plumage. There is in Egypt a certain picture that I meant by all means to see. It is believed to be the oldest painting in the world and depicts six geese feeding. I had different guides on my two visits to the Egyptian Museum at Cairo and neither of them knew of this picture. Reproductions of it had made me fa-

miliar with its composition, hence prepared to reject my first guide's numerous announcements of "Here it is!" as he pointed out one Pintail Duck after another, sometimes varying his choice with a picture of some other species. Wearied at last by his impositions I told him I intended to see the picture and that he *must learn* from some attendant where it was located, which resulted in the speedy finding of it. In execution the oldest painting in the world would do no discredit to a modern artist. The treatment is somewhat decorative and is suggestive of the Japanese manner of laying on of colors. As a natural history study it is exceedingly remarkable, as the following quotation from Mr. Charles Whymper shows: "Probably no single work of art in all Egypt has been more widely copied than the picture of geese, which is now in the museum at Cairo. It came from the tomb of Ne fer maat at Medum and is universally known as 'the oldest picture in the world,' for it is ascribed to the earliest dynasty, and approximately about 4400 B.C. To a naturalist it is peculiarly interesting, but the interest is linked with sadness, as the subject of the picture being entirely of bird-life one would have thought that bird-life would be a subject of continued interest; but the reverse is very much the case, so much so, that though this very picture is known to thousands who have never been to Egypt, and many thousands more who have been to Egypt and gone to see this very picture, and bought photographs or copies of it, few or any have really interest enough in it even to learn or inquire what are the names of the geese depicted . . . . the two geese at the extreme left and right are Bean Geese, birds that one might expect the old-time artist to be familiar with, and the same is true of the two geese in the left-hand group, which are White-fronted Geese, as both are winter migrants to Egypt, remaining till March. Of the two remaining birds, from their markings the naturalist will have no doubt but that they are Red-breasted Geese; and there is a mystery, as they never come to Egypt, and being a northern bird, one is utterly at a loss to explain why the artist of that long-

distant date should depict that special Goose. That he did see the bird, and with fidelity drew it, are facts, and one can only conclude that zoölogical collections are no new thing, but that men nearly six thousand years ago, must have kept rare birds in captivity for the pleasure of their beauty, and that artists went to their zoölogical gardens or collections, and drew pictures of the inhabitants of far distant climes for the walls of their temples and tombs."

This picture does not furnish the sum total of evidence of the ancient Egyptian's interest in natural history collections. There is left amidst the ruins of Karnak the lower portion of the walls of a chamber, on which are sculptured in low relief representations of the fauna and flora of the countries of Asia invaded by Thothmes III. The carved similitudes of birds, animals, plants, shrubs, and trees are sufficiently accurate for identification by those familiar with the objects themselves. Sometimes on a panel is a portrait in stone of a tree, while on other panels of similar size are carved life-sized representations of leaves and fruit, or leaves and flowers. This is not one of the regular show places of the temple, but an assistant dragoman assured me that he knew "the garden of Thothmes III," and after the usual rounds he guided me to it. After that I had an hour beside the Sacred Lake, where I found several species of shorebirds, Coots, Ducks, and in the shrubbery Blue-throated Warblers, while overhead were the Kestrels and Swallows.

Another illustration is afforded us by the walls of the temple at Deir-el-Bahari, on which are portrayed scenes from Queen Hatshepsu's expedition to Punt. Most exquisite is the modeling of the captive Cranes that march in the procession of slaves and wild animals sent from the foreign land.

Egyptologists tell us that a bit of ornithological history is set forth in a certain picture in the temple of Rameses III at Medinet Abu. They tell us that it represents a coronation scene, that the king having assumed the double crown of the Upper and the Lower Kingdom, a priest sets at liberty four

carrier pigeons, bidding them carry the tiding to the north, south, east and west of his majesty's dominion. And they let this point out for us the antiquity of the service of the carrier pigeon.

We saw other pictures in which birds have a prominent place. This is true of the hunting scene depicted on an outer wall of the temple at Kom Ombos. It delineates a Nile boat covered with reeds that have been sprayed with bird-lime or a similar sticky substance used for catching birds. In this picture about a dozen species of birds could be recognized, their modeling being very good; the same could be said of the cat, which was climbing the stalks to get the birds, though the cat was smaller than the birds. The motive of such pictures can be recognized, but there are many others in which the part played by the birds is symbolic with hidden significance. Seven charming little birds, colored blue, are carved on the prow of the boat in the Judgment Hall of Osiris at Karnak, but in the "holy of holies" at Abydos there are six blue-colored birds and a fish for adornment of the prow, their purport no one seems to know. But the symbolism of the hawk and the vulture, appearing in countless numbers of decorations, is understood to some extent. In the wall pictures a small bird, supposed to typify the departing spirit, hovers over the body of the dead. This the dragomans will always identify for you as a sparrow. Had these fellows ever lived in America and fought *Passer domesticus* they might have very good reasons for selecting it as the emblem of eternal life.

The island of Philæ, for centuries esteemed the gem of the Nile, once the theme for universal praise, endeared to all who saw it, now sits submerged beneath the desolating waters of modern commercialism, a place to close one's eyes whilst passing, a subject to be shunned. Few are so pious at this point as to be unwilling to insert another dam when viewing the damage done by the waters above Philæ. So recent are the changes wrought in Nubia by the Aswan dam that some account of them may not lack interest. Such effects may be

called far-reaching since they reach nearly two hundred miles: that is several miles beyond Abu Simbel to a point scarcely more than a score of miles below the Second Cataract. For many miles south of Philæ the depth of the water is so great that no more than the tops of the tallest palm-trees appear above the surface. As we go farther south inch by inch more of the trees show above the water, until at the end of about two hundred miles small deposits of Nile mud mark the last effects of the damming. In front of the famous rock-hewn temple of Abu Simbel, which is 175 miles above the dam, may be seen one of the results. It is in the form of about twenty acres of land that has been formed there since the dam was built. A portion of it is under cultivation, in other places the Nile mud is baked in the sun until it resembles broken pottery, and the ground is seamed with crevices, some of which are a foot and a half to two feet in depth. Formerly the Nile boats lay close to the cliff, and in recent years the visiting steamers furnished electricity for the lighting of the temple before the new land was formed.

Abruptly, almost as abruptly as darkness fills a room at night when the lights are turned off, come changes on the Nile as we enter Nubia. The dam has caused some of these changes and intensified those previously existing. Forty years ago, when Miss Amelia B. Edwards made her observations that are recorded in "A Thousand Miles up the Nile," the arable land between Philæ and Wadi Halfa averaged from six to sixty yards in width. This slender strip is now under water for the greater part of the year. The natives driven to the rocky heights above their former homes have in some places gathered pitiably small patches of soil, some no larger than a grave, upon which vegetation was growing. For the dispossession the Government paid them a small sum with which to rebuild their homes. Their new homes of stone look more comfortable than the mud-walled houses of Egypt. They exhibit unique taste in mural decoration, for vaulting ambition is displayed in the enrichment of the frieze. The unit of design is a plate. There appear

repetition, variety, and contrast in the arrangements of the plates, showing that the laws of good design have not been overlooked. Dinner-plates, soup-plates, large plates, small plates, various kinds of plates are set fast in the mortar. Above one door there was a large plate in the middle with a smaller one on either side. Another house displayed a single plate with a decoration around its entire edge. A peep into one of these houses, which was about ten feet square, discovered a bed, a bench, and some shelves holding a few bottles, cans, and dishes.

To visit temples we went ashore at Kalabsheh, Dendur, Gerf Hossayn, Wadi Sabua, Amadah, and Abu Simbel. From the nearby hamlets most of the adults were absent at work in Cairo, but their children were left at home with the old and disabled. Upon landing the children came racing down to meet us. With relief it was noted that their faces were free of flies, most of the flies having been left behind in Egypt. All of the children were keenly alert to earn a few piasters, their strongest role consisting in poses for the amateur photographers. Considerable invention was shown in the design of costumes that would catch the eye. At one landing place on the Nile a tiny tot of a girl was busily working a miniature shadoof, apparently entirely unconscious of our arrival. She received her reward. At another place a juvenile showman exhibited a large green chameleon, while others brought their household pets, a puppy or a full-grown dog. But animals were rare. At Kalabsheh I saw one donkey. Such scarcity of life, both animal and vegetable, was characteristic of Nubia nearly a half century ago, when Miss Edwards wrote of it in these words: "Meanwhile, it is not only men and women whom we miss — men laboring by the river-side; women with babies astride on their shoulders or water jars balanced on their heads — but birds, beasts, boats; everything that we have been used to see along the river. The buffaloes dozing at midday in the shallows, the camels stalking home in single file toward sunset, the water-fowl haunting the sandbanks seem suddenly to

have vanished. Even donkeys are now rare; and as for horses, I do not remember to have seen one during the seven weeks we spent in Nubia."

Between Aswan and Abu Simbel almost all the birds that were seen were either on the wing, or perched in the tops of partially submerged sont trees. Sometimes we ran near enough these trees to allow of identification of the birds, at other times they were clearly seen but had to be assigned to the class of birds unidentified. Of these there were several, both in Egypt and Nubia, that by me had to be remembered in the great class of the unknown.

OWLS, AS REGARDED BY THE SCIENTIST, THE THE AGRICULTURIST, AND THE SPORTSMAN.

BY R. W. SHUFELDT.

(Photographs from Life by the Author.)

When Doctor R. Bowdler Sharpe, of the British Museum, published his invaluable work entitled *A Hand-List of the Genera and Species of Birds,* he recognized no fewer than thirty genera of Owls in the world's avifauna, and, according to him, they have been created to contain 316 species of these very interesting birds. This classification was made in 1899, since which time there have doubtless been many more species added to the list. Some of these thirty genera contain but one species, while others contain all the way from two to eighty, the latter number being found in the genus *Scops.* Besides these existing species of owls science recognizes quite a number of extinct forms, which are known to us only through their fossil remains.

The owls of the United States, according to the last Check-List of the American Ornithologists' Union, fall into twelve different genera, and there are at least forty-three species and subspecies of them. As in the case of the Old World forms, too, several species of large fossil owls have been dis-

covered, which go to show that birds of this kind have existed in North America for a great many thousands of years.

Our United States owls have interested me for nearly half a century, and during all that time I have kept several species of them as pets; have shot specimens for my own and other collections, and photographed from life many of the different species. Without referring to any special statistics or censuses with respect to these birds in nature, I am of the opinion that, with the exception of certain places and in the vicinage of large cities, owls are about as numerous elsewhere as they were fifty years ago. This is due to the fact that man does not use them for food; other animals seldom prey upon them, and the majority of the species are entirely nocturnal in habit. Around cities and towns, however, owls are almost invariably slain when a man or a boy comes across one of them in the open with the means of shooting the bird or otherwise killing it. There are but few exceptions to this rule anywhere in the course of a year, and through such practices altogether too many of these useful birds are, in sheer wantonness, annually destroyed.

Throughout the world there are thousands of skins and mounted specimens of all kinds of owls in the collections of private individuals, ornithologists, and museums, and these are of great value to science. There are also many skeletons of owls in similar hands and institutions, and the study of these has thrown much light on the general history of birds, in so far as such material can do so. Studies of this character are extremely important, and up to the present time have by no means been exhausted, in so far as owls are concerned. Indeed, several of the structures in the anatomy of these birds are of wonderful interest, as the assymmetry of the skull in some species; their extraordinary ears; the osseous platelets of the eyes, and so forth, all of which I have studied many times and described in various publications.

In this age, however, owls are, as in the case of all of our birds, looked upon in an entirely different light from what they were fifty years ago, when they were far more numer-

Fig. 1. Saw-whet Owl.

ous. In those days, no one thought of considering birds of any kind in their relation to man and his material interests; while, as we at the present time know, in this age of commercialism, our Government employs a staff of economic ornithologists, who are engaged in making estimates of the value of every species of bird in our avifauna, in so far as they affect our forests, our farm products, and our market supplies of feathered game. To arrive at these estimates, vast numbers of birds are sometimes sacrificed, and often with no better result than to enforce, through federal legislation, some expensive blunder.

In these extensive investigations, owls have come in for their full share of being scrutinized with respect to their habits and the contents of their "stomachs," — the latter line of examination costing many a one its life. These investigations need not detain us here; and, aside from such value as owls have for the scientist, as pointed out above, it is of the greatest importance that agriculturists and sportsmen should ponder well upon the question as to the value these birds have for them in their — it must be admitted — widely different pursuits.

With but comparatively few exceptions, agriculturists believe, as did their ancestors before them, that owls are simply to be classed among such other "vermin" as rats, skunks, and foxes, and this quite irrespective of their size, species, or genus. This is a a long way from being true, — indeed it is quite the reverse of the truth; for, apart from some of the medium sized or larger owls occasionally helping themselves to a fowl from the poultry-yard, these birds are the best friends the agriculturist — or more particularly the dealer in feathered live-stock — has in the entire range of wild bird life. As a matter of fact, nearly all owls hunt at night, at a time when most all farm-yard fowls are at roost and under cover, and therefore safe from their attacks. Turkeys, guinea-fowls, and ducks may, at times, form exceptions, and the Great-horned owl from time to time captures one of their kind; but even this is by no means a common occurrence.

Most of the stories, as they have come down to us through the generations, have arisen among the farmers in those sections of the country where such barn-yard fowls as turkeys and chickens, not having been supplied with shelter, have

Fig. 2. Subadult Barred Owl.

habitually roosted in the trees and elsewhere outside the barns and outbuildings. Where this has been the case on farms, where the Great-horned owl is more or less common

in the neighborhood, such fowls have suffered from its nocturnal depredations, until the shotgun has put an end to its raids.

No such harm could come from the three species of owls forming the illustrations to the present article, which I have selected from a large collection of photographs of such subjects, taken by me from life during the past eight or ten years.

Figure 1 is of the little Saw-whet owl (*Cryptoglaux a. acadica*), a form with a body about the size of a robin. Figure 2 is a subadult Barred owl (*Strix v. varia*), the young of which is shown in Figure 3. This medium sized species may occasionally get away with smaller denizens of the poultry-yard, including pullets and chicks; but I do not believe it happens nearly as frequently as many people believe or tell about. Then, when we come to the common Screech owls of the genus *Otus,* the old and young of which are shown in Figures 4 and 5, it is very questionable, in my mind, that they can be considered at all in the light of habitual robbers of the hen-roosts or the pigeon-cotes. There are many species of this genus distributed all over the country, and they prey principally upon small birds, rats, mice, other numerous small rodents, and shrews.

As a matter of fact, our various species of medium sized owls are of vast importance to agriculturists everywhere throughout the country, for they destroy millions of mice, rats, weasels, and other mammals, which eat up, in the course of a year, thousands of tons of grain and other farm produce; and were these animals not kept down by such birds as the owls, they would, in some parts of the country, eat the farmer and agriculturist out of house and home, compelling him to seek other employment for a livelihood. Indeed, it would be an excellent thing to not only encourage such owls as the Barn owl for example to breed and multiply in the neighborhood of large farms, but also to introduce and protect the bird, in such localities as it does not normally occur.

So much, then, in regard to the relation of owls to the welfare of the agriculturist. We have next to do with the

Fig. 2. Young Barred Owl.

question of the value of these birds to the hunter of small varieties of feathered game in this country. We may omit any other kind of game that the sportsman pursues, as hares, rabbits, squirrels, and the like, for they can only be taken by the larger species of owls, and often with advantage to man, as in the case of Jack Rabbits, and so on. There is no doubt in the world but that the owls in this country, of many species and of all sizes, in the course of a year capture and consume a good many game-birds of all kinds. It is simply as birds of prey that they do this, however, and with the sole object of sustaining life. Moreover, it is only the medium sized and larger owls that capture such game bird as quails, grouse, turkeys, and so on, though the smaller species may prey upon the young of such game occasionally. Man, however, is the great destroyer of game-birds of all species; and between his gun and his traps he is gradually, but with marked certainty, exterminating all such species in the world's avifauna, just as he did the wild pigeon in the last half century.

An average gunner who hunts regularly will kill more feathered game in one season than any species of owl will in the course of its natural life-time; so that, when we come to compare the number of owls in the country with the number of men who habitually hunt and kill feathered game, it is safe to say that we may almost reckon the amount of destruction along such lines by the former as practically *nil*.

Audubon, who published something in regard to the habits of a few of our owls, says that the food of the big Snowy owl "consists of hares, squirrels, rats, and fishes"; but that "it also watches the traps set for muskrats, and devours the animals caught in them." Of the Burrowing owl he says: "They are strictly diurnal, feed principally upon grasshoppers and crickets, and, according to the Indians, sometimes upon field-mice"; while with respect to the Acadian owl, he fails to mention what its food consists of, though he figures it with what appears to be a mouse in its talons.

In the case of the Barn owl, he says that "After long ob-

servation, I am satisfied that our bird feeds entirely on the smaller species of quadrupeds, for I have never found any portions of birds about their nests, nor even the remains of a single feather in the pellets which they regurgitate, and which are always formed of the bones and hair of quadrupeds."

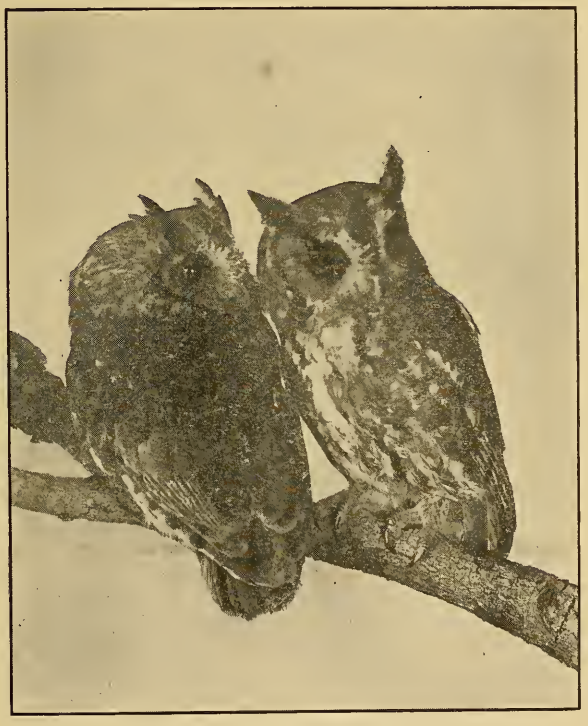


Fig. 4. Adult Screech Owl.

"The Barred Owl," he says, "is a great destroyer of poultry, particularly of chickens when half-grown. It also secures mice, young hares, rabbits, and many species of small birds, but is especially fond of a kind of a frog of a brown colour, very common in the woods of Lousiana." So far as this report goes, the sportsman has nothing in particular to

hold the Barred owl up for, and in these days they probably do not kill as many young chickens as they did when Audubon lived, and whose observations, by the way, were largely confined to Louisiana, where, so far as my experience car-

Fig. 5. Young Screech Owl.

ries me — and I've kept chickens in Louisiana — there is a flightless, featherless, black owl that will get away with more chickens in one night than a whole family of Barred owls will in the course of two or three months.

There is no question but that the Great-horned owl preys upon feathered game of all kinds, but the bird by no means confines itself to that line of diet, for it is equally fond of many of the medium sized and smaller mammals, as opossums, rats, squirrels, young hares, rabbits, etc., and it will, when occasion offers, consume dead fish when washed ashore, in which habit he is surely performing a public service.

Audubon does not say a word about the food of the Screech owl, beyond the fact that it "pursues large beetles"; while on the other hand he devotes the major share of his account of the bird to mixing up fact and tradition in regard to its two phases of plumage, and taking Wilson to task in regard to what he said about it.

Taking everything into consideration, then, with respect to the habits and food of owls, as such matters affect the welfare of man, it is perfectly safe to say, in truth, that upon the whole these birds are good friends to our race in the long run, and fully deserving of our protection and encouragement. To persistently destroy these birds would be a grievous error, as in practically all cases where man has upset the balance of nature, it has generally reacted, in boomrang fashion, by giving him a fearful rap for his pains.

PLAINFIELD, NEW JERSEY, BIRD CENSUS.

BY W. DEW. MILLER AND CHARLES H. ROGERS.

In 1914 we were accompanied by Dr. William H. Wiegmann. We started at 3:50 a. m. from East 7th Street and walked northward across the city and took a devious route through and over the Watchung Mountains to the Passaic River, up whose south bank we went to the Dead River, and up it half a mile to a certain marsh, which we reached just at sunset. Thence we took the shortest road back to North Plainfield, where we boarded a car at 10 p. m., except that W. DeW. M. lingered on the way to listen to the Virginia Rail and got in somewhat later. Weather fine; cool N. W.

breeze; 47° at start, 54° at return. We satisfactorily identified 104 species of birds, which we consider a good list for an absolutely inland region, without water, save for ponds and small streams.

In 1915 we started five minutes later and followed the same route, except that we were forced to take shelter so much from the rain that we did not reach the Dead River till nearly dark, and so did not go up to the marsh, but returned by road to North Plainfield in time for the 9 p. m. car. Weather cloudy except for first two or three hours; frequent showers in a. m.; moderate S. E. wind; 45° at start, 51° at return. Only 89 fully identified species, due partly to the weather and partly to the fact that it was not nearly so much the height of a big wave as it was the previous year.

While not always strictly together, we were always within hail and each of us noted every species recorded except that W. DeW. M. alone heard the Whip-poor-will in 1914 and the Black-Billed Cuckoo in 1915. The numbers of individuals recorded are the result of actual count (as far as possible) and were entered with exceeding frequency during the progress of the hunts. As we both did not hear or see everything, when we differ the larger number is here given, and we believe these numbers to be conservative.

Strangely enough, exactly the same twenty-four species of *Mniotiltidæ* were seen each year, but their number of individuals was 334 in 1914 and 186 in 1915, this difference being nearly the difference in the total number of individuals noted, 1112 in 1914, 929 in 1915. The larger numbers of Thrushes and particularly of White-throated Sparrows and Myrtle Warblers in 1915 is noteworthy.

That it is not well on a big day to quit work with the arrival of darkness is shown by the circumstance that in 1914 we added five species to our list after it had grown too dark to see them; these were Virginia Rail, Woodcock, Greater Yellowlegs, Screech Owl and Whip-poor-will. The Woodcock did not even say anything, but we all heard clearly the characteristic twittering of the wings of one which flew

across the road just ahead of us at about the height of telegraph wires.

On May 31st, 1915, C. H. R. followed alone in sixteen hours the complete 1914 route and noted 72 species. This list has been accepted for publication in the August number of "The Oriole," published by The Somerset Hills Bird Club, Bernardsville, N. J.

	1914	1915
Great Blue Heron	1	
Green Heron	1	1
Black-crowned Night Heron	2	
Virginia Rail	1	
American Woodcock	1	2
Least Sandpiper		7
Greater Yellowlegs	1	
Solitary Sandpiper	4	6
Spotted Sandpiper	15	11
Killdeer	5	
Mourning Dove	10	11
Marsh Hawk	2	1
Cooper's Hawk	2	1
Red-shouldered Hawk	2	1
Broad-winged Hawk	1	
American Sparrow Hawk	1	
Barred Owl	1	
Screech Owl	1	
Yellow-billed Cuckoo		3
Black-billed Cuckoo		1
Belted Kingfisher	2	5
Hairy Woodpecker	2	1
Downy Woodpecker	9	3
Red-headed Woodpecker	2	
Northern Flicker	10	13
Whip-poor-will	1	
Chimney Swift	31	35
Ruby-throated Hummingbird	2	2
Kingbird	8	15
Crested Flycatcher	17	14
Phœbe	12	7
Wood Pewee	6	2
Yellow-bellied Flycatcher	1	
Chebec	9	
Blue Jay	30	15
American Crow	34	22
Starling	7	17
Bobolink	14	5
Cowbird	4	2
Red-winged Blackbird	14	5
Meadowlark	11	8
Orchard Oriole	5	
Baltimore Oriole	20	15

Purple Grackle	12	14
House Sparrow	37	60
American Goldfinch	20	15
Vesper Sparrow	7	5
Grasshopper Sparrow	4	1
Henslow's Sparrow	1	1
White-crowned Sparrow	1	
White-throated Sparrow	6	44
Chipping Sparrow	21	19
Field Sparrow	15	7
Song Sparrow	66	54
Lincoln's Sparrow		3
Swamp Sparrow	6	4
Towhee	13	8
Rose-breasted Grosbeak	6	5
Indigo Bunting	7	4
Scarlet Tanager	13	7
Purple Martin	4	9
Cliff Swallow	1	2
Barn Swallow	23	20
Tree Swallow	1	12
Rough-winged Swallow	2	11
Cedar Waxwing	3	25
Red-eyed Vireo	12	17
Warbling Vireo		2
Yellow-throated Vireo	8	3
Solitary Vireo	4	
White-eyed Vireo	1	
Black and White Warbler	8	9
Worm-eating Warbler	6	2
Blue-winged Warbler	12	11
Nashville Warbler	2	3
Tennessee Warbler	1	1
Northern Parula Warbler	22	6
Cape May Warbler	3	7
Yellow Warbler	6	3
Black-throated Blue Warbler	35	9
Myrtle Warbler	10	27
Magnolia Warbler	32	6
Chestnut-sided Warbler	16	3
Bay-breasted Warbler	6	1
Black-poll Warbler	4	1
Blackburnian Warbler	13	3
Black-throated Green Warbler	17	9
Oven-bird	25	25
Northern Water-Thrush	12	12
Louisiana Water-Thrush	1	2
Maryland Yellow-throat	42	34
Yellow-breasted Chat	2	1
Wilson's Warbler	8	2
Canada Warbler	23	2
American Redstart	28	7
Catbird	21	18
Brown Thrasher	2	1
House Wren	6	1

White-breasted Nuthatch	2	
Red-breasted Nuthatch	1	
Tufted Tit	6	5
Chickadee	3	2
Wood Thrush	19	21
Veery	17	22
Gray-cheeked Thrush	1	2
Olive-backed Thrush	5	8
American Robin	94	82
Bluebird	4	8

MISSISSIPPI KITE IN NEBRASKA.*

BY PROFESSOR B. H. BAILEY.

In "Birds of Nebraska," by L. Bruner, R. H. Wolcott and M. H. Swenk, page 50, *Ictinia mississippiensis* (Wilson) A. O. U. No. 329 is referred to as follows: "While the known range of this kite would bring it within our borders, the record by R. E. Dinges as given in Bruners' 'Notes on Nebraska Birds' is very likely an error."

The A. O. U. check list gives its range as "Lower Austral Zone from Kansas, Iowa, Illinois, Southern Indiana, and South Carolina, South to Texas and Florida; winters in Florida, Southern Texas and South rarely to Guatermala; accidental in Colorado, South Dakota, Wisconsin and Pennsylvania."

While in Omaha, Neb., the writer purchased for the Coe College Museum a specimen of this species which was in a local taxidermist's shop, and which was shot by the man from whom the bird was purchased.

The kite was killed a few miles south of Omaha in November, 1912, and although the sex was not determined at the time it was mounted, the following description from the work by N. S. Goss, "History of the Birds of Kansas," is so in accord with the specimen in hand as to leave no doubt that this bird is a young female. "Head, neck and lower parts white with a yellowish tinge; this most perceptible on the tibiae. Each feather with a median ovate spot of black-

*Read before Iowa Academy of Science, May 1st, 1915.

ish brown, more reddish on the lower parts. The chin, throat, and a broad superciliary stripe, are immaculate white. Lower tail coverts each with a median acuminate spot of rusty, the shafts black. Upper parts brownish black; wing coverts, scapulars and interscapulars, feathers of the rump, and the upper tail coverts, narrowly bordered with ochraceous white, and with concealed quadrate spots of the same; primary coverts, secondaries and primaries sharply bordered terminally with pure white. Tail black (faintly whitish at tip) with three (exposed) obscure bands of a more slaty tint, this changing to white on the inner webs, in the form of angular spots forming the bands. Lining of wing pale ochraceous, transversely spotted with rusty rufous; under primary coverts with transverse spots of white." "Iris brownish red, legs and feet brownish."

The following measurements were taken from the mounted specimen secured from Nebraska:

Wing, 11⅞ in. 200 mm.
Tail, 6¾ in. 171 mm.
Tarsus, 1.35 in. 33 mm.
Bill without cere, ⅝ in. 15 mm.

This is believed to be the first record of *Ictinia mississippiensis* authenticated by a specimen taken in Nebraska.

Coe College, Cedar Rapids, Iowa.

THE WILSON BULLETIN

A Quarterly Magazine Devoted to the Study of Birds. Official Organ of the Wilson Ornithological Club

Edited by **LYNDS JONES**

PUBLISHED BY THE WILSON ORNITHOLOGICAL CLUB, AT CHICAGO, ILL.

Price in the United States, Canada, and Mexico, One Dollar a year, 30 cents a number post paid. Price in all countries in the International Postal Union, $1.25 a year, 40 cents a number. Subscriptions may be sent to Lynds Jones, Oberlin, Ohio, or to Mr. P. B. Coffin, 3232 Groveland Avenue, Chicago, Ill.

OFFICERS FOR THE CURRENT YEAR

President: Dr. T. C. Stephens, Morningside, Sioux City, Iowa.

Vice-president: Geo. L. Fordyce, Youngstown, Ohio.

Secretary: Thos. L. Hankinson, Charleston, Ill.

Treasurer: P. B. Coffin, 3232 Groveland Ave., Chicago, Ill.

Editor "The Wilson Bulletin": Lynds Jones, Spear Laboratory, Oberlin, Ohio.

Business Manager: Gerard Alan Abbott, 1543 East 61st St., Chicago, Ill.

EDITORIAL

The lateness of the present number of the Wilson Bulletin is due to the editor's absence from home from the 20th of June to the 14th of September. He was conducting a party of sixteen from Chicago to Seattle, and from there up through Admiralty Inlet, and out through the Straight of Juan de Fuca to Neah Bay, and from there out on the Pacific and down among the islands and on the coast to Moclips. It was a camping trip, conducted as a summer class from Oberlin College. The sea life of the tide flats was studied as well as the life of the primeval spruce, cedar and hemlock forests. The trip proved so successful, so enjoyable, and so profitable that he proposes to organize a party for the same trip next summer, to occupy the time between June 19 and July 29.

The Bluebird, edited and published by Dr. Eugene Swope, Cincinnati, is publishing a series of color plates of the eggs of North American Water Birds in connection with articles from the pen of Dr. R. W. Shufeldt. The ten plates which are ready show the eggs natural size, and the colors and markings reproduced with fidelity. It is a valuable feature of this enterprising publication.

We are pleased to note that The Guide to Nature has introduced a department of Ornithology, which is edited by Harry G. Higbee. In the September number there are several good reproductions from photographs. The introduction of this feature should serve to increase the popularity of this magazine of the Agassiz Association.

The editor will have something to say about certain interesting features of his summer experiences in the December Wilson Bulletin. It will be recalled that a number of articles appeared from his pen about his trip down this same coast in June, 1907. The intervening eight years has witnessed marked changes, which it is proposed to note at this time.

Many readers of the Wilson Bulletin must have spent some of the summer where they have been able to gather interesting facts about bird life. The editor will be glad to receive accounts of these studies and the conclusions reached for the pages of the Bulletin. The real value of such studies is appreciated only when you write them up for publication.

GENERAL NOTES

BIRDS AND THE WORLD WAR.

A private soldier now on leave in England says birds warn the allies of German gas attacks. Long before the smell of the fumes can be detected by the man in the trenches, there is to be heard a clamouring of alarmed and awakened birds. These soon fly away beyond the reach of the deadly fumes, but the soldiers have had warning, and meantime adjust their respirators, and make other preparations to met the gas. This item of war news is an addendum to the remarks in Dr. Shufeldt's very interesting paper on Ornithology and the War in Europe.

J. H. GURNEY.

Keswick Hall, Norfolk.

TAVERNER ON CORMORANTS VS. SALMON.—On account of numerous complaints that cormorants were damaging the salmon fisheries of the Gaspe coast of Quebec, Mr. P. A. Taverner and two assistants investigated conditions there for two months during the summer of 1914.

General observations did not support the contention that cor-

morants destroy salmon, nor did stomach examinations. Of 32 stomachs examined, 5 were empty, 3 contained unrecognizable food, 16 contained sculpins, 5 herrings, one capelin, one eel, and 2 tomcod or allied fishes.

Furthermore, the bulk of evidence shows that salmon have lately been increasing from year to year. "The cormorants are also generally increasing in number, the rookeries are enlarging and new ones being established. These facts taken together do not indicate that the cormorants are markedly harmful to the salmon." *—W. L. M.

*Mus. Bul. 13, Canada Dept. of Mines, 1915, p. 14.

INCUBATION PERIOD OF THE GANNET.

In the very interesting list of periods of incubation, as noted in different birds, contributed to your pages by Mr. F. L. Burns, the period allowed for the Gannet (*Sula bassana* (L.)) is given at 39 days, but this seems too short.

An egg laid on April 22d at the Bass Rock on the east coast of Scotland, and at once inscribed with the date by Mr. J. M. Campbell, the lighthouse keeper, was not hatched until June 5th, which gives a period of 44 days.

Another Gannet's egg, laid in confinement at Brighton in Sussex, is recorded by the late Mr. E. T. Booth to have hatched out about the 43d day, as stated in "The Gannet" (p. 355), where the *pros* and *cons* of the subject are discussed at some length and different opinions quoted.

J. H. Gurney.

Keswick Hall, Norwich.

A NEW LOUISIANA BIRD.

The observance of a solitary species of bird life has not only supplied the Louisiana list with a new bird but with the one order of the seventeen found in the United States that has been missing since the avian life of the state has been studied by those who preceded Audubon and those who have followed him.

The species observed was a Wilson petrel (*Oceanites oceanicus*), sometimes known as one of "Mother Cary's Chickens," of the order *Tubinares*, or Tube-nosed swimmers, which includes, besides the petrels, the fulmars and shearwaters.

The discovery was made by Herbert K. Job, head of the Department of Applied Ornithology of the National Association of Audubon Societies, and Stanley Clisby Arthur, ornithologist of the Conservation Commission of Louisiana, while they were on an expe-

dition to the breeding islands along the Louisiana coast west of the Mississippi river, June 23d, 1915.

The petrel, when observed, was about a mile off shore, paddling the rough waters of the Gulf of Mexico, and about seven miles west of Grand Isle. The stranger to the Pelican State circled the commission's petrol boat "Opelousas" but, although efforts were made by throwing lard on the waters to entice it close enough to be photographed, it finally flew out of sight, however not before the ornithologists had thoroughly studied it through binoculars for over a quarter of an hour.

Although both Mr. Job and Mr. Arthur kept a close watch for other specimens during the remaining five days of their trip no other petrel were sighted, and the specimen they did see was absolutely alone.

NEW DUCK SPECIES BREEDING IN LOUISIANA.

Since the establishment of the vast game and waterfowl preserves in Louisiana along the Gulf of Mexico, particularly the State Game Preserve and Marsh Island, it has been observed that there has been a marked increase in the species of waterfowl and shore birds that seek these marshes for breeding purposes.

According to a late report made by Stanley Clisby Arthur, ornithologist of the Conservation Commission of Louisiana, to his superior, President M. L. Alexander, four species of wild duck that go to the northern tier of states for the rearing of their young have remained on the protected areas of the southern state to perform that function.

The Wood duck (*Aix sponsa*); the Florida duck (*Anas fulvigula*), and in few numbers the Blue-winged teal (*Querquedula discors*) have, until the spring of 1915, constituted the Louisiana list of *Anseres* breeding within that state's borders. Observation and investigation by Mr. Arthur of the breeding birds this spring, which has only partially been completed, show that the Mallard (*Anas platyrhynchos*); the Gadwall (*Chaulelasmus streperus*); and the Bald-pate (*Marcca americana*) nested in few numbers on Marsh Island. The conservation agent there noted that the height of the breeding season was from April 1st to May 15th. Nesting was observed as early as March 20th, however.

On June 17th the commander of the Conservation Commission's patrol boat "Louisiana" observed a flock of 28 Lesser Scaup (*Marila affinis*) ducklings swimming in the waters of Lake Borgne. The little waterbirds were with the adult parents and a castnet was used in an endeavor to capture some of them to make sure of identification. According to Captain Sandras' report the ducklings were

but two weeks old, establishing beyond all doubt that they were bred in the Louisiana marshes.

The conservation agent on Marsh Island also discovered the Long-billed curlew (*Numenius americanus*) breeding on the marsh-land of the preserve under his patrol. During the visit of former President Theodore Roosevelt to the bird reservation along the Louisiana coast east of the Mississippi river during the early part of June, nests and eggs of the Man-o'-war bird (*Fregata aquila*) were found, thereby settling the question whether this bird is a Louisiana breeder or not.

NESTING OF A CHIMNEY SWIFT IN A HOLLOW TREE.

Several years ago, in company with an ornithological friend, Walter Bennett, I made a canoe trip through the big woods that cover the northern portion of Minnesota. At Walker, a lumber town on Leech Lake, we purchased a birch bark canoe of the Ojibway Indians and plunged into the wild, traversing a tangle of lakes and streams and swamps filled with interesting wild life, especially birds. Among our varied experiences, one of the most interesting was the discovery of a pair of tree-nesting chimney swifts. Of course, as is well known, this was the universal custom of these birds before the advent of the white man with his convenient chimneys. Like some other birds, the chimney swift has taken to modern improvements.

Far in the heart of the wilderness, a hundred miles from a lemon or a railroad, we one night pitched our white tent upon the clean, white sands of a little island. Behind us rose a large dead pine, its gnarled branches silhouetted sharply against the sky, upon which the turkey vultures came to perch and preen their feathers. That night the veery — the "wilderness bird" we called him — sang entrancingly long after all other bird-notes were hushed and darkness had settled upon the earth. Out on the lake rang out the wild demoniacal laughter of the loons. It was a wild spot, — remote, lonely.

The next day, as we sat beside our campfire, eating a meal, I noticed a chimney swift fly to a tall stub that stood upon the shore and disappear beneath a projecting twig. Examination disclosed a small hole, into which the bird had apparently entered. Further observation confirmed this conclusion. The birds were using the stub, presumably for breeding purposes. The next day presumption was changed to certainty. After chopping a hole in the base of the stub, my companion crawled in, and worming his way up the hollow interior, found a nest composed of sticks glued together

by the bird's saliva and fastened to the wood by the same material. Within the nest were four callow young, about half grown. This was on July 20. The nest was about fourteen feet from the ground.

So unique a discovery afforded us rare pleasure. Such experiences far more than compensate one for any incidental discomforts of such a trip.

MANLEY B. TOWNSEND.

Nashua, N. H.

BACHMAN'S SPARROW AT CHICAGO.

Bachman's Sparrow (*Peucæa æstivalis bachmani*) is, like the Chewink, Cardinal, Carolina Wren and several others, a species that is gradually from year to year extending its breeding range northward. The largest jump in this extension, if not in fact, at least in record, is to be chronicled from this neighborhood. The exact locality where it turned up here is "Waller's Park," in the northern part of the village of River Forest, which is described more in detail elsewhere in the "Bulletin." Our post office is Oak Park, that better known suburb of Chicago; hence, when speaking to strangers our place of residence is Oak Park, the better known of the two; but to such somewhat familiar with local conditions, we say River Forest. While looking for warblers and other migrants in this charming spot on May 9th last I suddenly heard a loud, melodious song in the southern part of the park, where there are many larger oaks. It seemed new, and yet it struck a responsive chord in the memory. At first I wanted to dismiss it with the thought, as I had done several years previously in Edwards County, southern Illinois, that it was an unusual loud and melodious Field Sparrow or an unusually musical Chewink singing. Then memory seemed to make an unconsciously stronger effort and I said to myself, that is none other than Bachman's Sparrow. Now for the verifying! Glass in hand I sneaked to the place whence the sound came, and I saw that there were about ten individuals of what were undoubtedly a species of sparrow, but unlike any we have here as migrants or summer residents. They acted as though very much at home and enjoying the place; they were mostly on the grass-covered ground, feeding, but as if moved by an irresistible exuberance of spirit they would in turn, first one, then another, mount up into the lowest branches of the trees and sing their song, then descend again. Nor did they seem wary or afraid, and this gave me an opportunity to watch them at close quarters. They were a chubby sort of a finch, of about the size of the Song Sparrow, with decided reddish brown upper parts and a suffusion of yellowish or buff on the unstreaked underparts. Bill and feet were also pinkish,

if memory serves me right, thus completing the picture of a larger and chubbier and louder edition of the Field Sparrow. There was no mistaking, the incidents and scenes of my first meeting with them four years previously near Browns, Illinois, were too indelibly impressed in the memory. A look at several skins of this species in my collection, when I had come home, added an unnecessary confirmation to the identification.

Thinking that this little batch of *Peucæa* had by the ardor and excitement of migration been carried further north than they had intended, in the companionship of White-throats and others, and would retrace their way south again for a hundred miles or so, to the latitude which, according to latest reports, formed the northern limits of their breeding range in this state, I did not visit the spot the next day. Therefore I was much surprised when on happening that way again on the 12th of May, I found them still in the same place. Later, they seem to have scattered in pairs, two or three of which at least remained in the park, where they had been first seen, as I got glimpses of what seemed to be one of them several times later in May and in June. During the last days of the latter month, two or three were heard singing lustily in a rather open grove across the street from my house, and here, to make the record indisputable, I took one on July 1st. It proved a male, the sexual organs of which showed breeding. Thus it seems that this more or less Carolinian species must now be counted a member of the avifauna of the Chicago area.

G. Eifrig.

River Forest, Ill.

SONG SPARROW, THRUSH, AND OWL NOTES.

While on a collecting trip in Virginia, during the middle of July of this year, Mrs. Shufeldt captured a young Song Sparrow (*Melospiza m. melodia*), which apparently had very recently left the nest. I placed it in a comfortable cage until such a time as I could arrange to photograph it. This came about in a few days, during which period the bird fed readily on hard-boiled egg, bread, and water, and a few meal worms. It was remarkable how rapidly it developed and grew, and still more surprising how fond it became of meal worms.

An interesting point appeared with respect to its plumage; for, while this was apparently entirely normal, the *proximal third* of all the tail feathers came out pure white, and that portion of the tail is that way at the present writing. The bird appears almost like another species; and if it be a case of partial albinism, it is a very

remarkable form of it. It is hardly possible that it has been caused by fright, incident to its capture, cases of which I have personally seen in men and women, — that is, where the hair, or certain locks of it, has turned white in a few hours from fright or great anxiety.

After this bird had assumed its full summer first plumage, I determined to restore it to freedom, letting it out in a room where the windows were all open. It flew out and lit on one of the shutters. Upon shaking the bottle at it, in which I kept a supply of meal worms, it immediately flew back into the room, lit on my hand, and tried to coax me into giving it a worm. After this the bird became such a pet and so interesting that I have decided to keep it all winter, to note what plumage its tail will take on in the spring. It eats heartily of canary seed, but prefers an insect diet. Its summer notes during the day are charming, and I love to listen to them while at my work. During warm days it takes a bath three or four times between sunrise and dark.

My attention has recently been called to a case of *double-nesting*, the birds being the European Thrush (*Turdus musicus*). The two pairs built their nests side by side, in close contact but not interwoven. The site was in a tree in a copse at Codicote, England, and the photograph shows a clutch of eggs in each nest. It was taken by Mr. G. J. Buller, of the Letchworth Museum, in which institution the specimen is now exhibited. I am interested to know whether any one has ever observed such a "double-nesting" having been resorted to by any of our United States thrushes, as the Wood Thrush, or any others of the genus *Hylocichla*.

Recently, I have been collecting material with the view of publishing some articles, aimed to demonstrate to American agriculturists the usefulness of our Owls. One or two these articles have already been accepted, and will appear in course. Mr. John Henry Gurney, a Corresponding Fellow of t Union, writes me that they have been trying for years to impress the fact upon the minds of the gamekeepers in England of the value of Owls; but that they, as a rule, still persist in killing those birds as "vermin." Recently they have been issuing there special slips, printed in very bold type on a fine grade of paper, for distribution among the gamekeepers and farmers, but especially among the former. Copies of one of these slips are now before me. A line of big type, "The Utility of Owls," invites attention to a striking instance given below it, which says: "Taken out of a Barn Owl's Tree at Keswick in Norfolk (April 10, 1911) 114 'Pellets' containing the skulls of:—19 very small rats, 126 Long- and Short-tailed Field-mice, 69 Shrew-mice, and 3 small birds (perhaps Green finches). No Game."

Mr. Gurney writes me (Aug. 3, 1915): "The old tree, which was an oak, blew down; it was quite hollow, and some of the pellets were in fragments, which had the appearance of being many months old. They were all soaked in water, and the skulls carefully laid out in rows and counted."

From the viewpoint of practical, economic ornithology, it would seem that the issuance of such slips by the U. S. Department of Agriculture to the more intelligent class of farmers and general agriculturists, all over the country, would be of immense service in this direction, and doubtless accomplish much good in sparing our smaller and medium-sized species of Owls, — birds which, in fact, belong to the most useful class, in so far as the interests of agriculture are concerned.

R. W. Shufeldt.

Washington, D. C.

FIELD NOTES FROM THE CHICAGO AREA.

My observations during last spring's imigration — limited though they are, owing to preoccupation — confirm Prof. Lynds Jones' remark respecting the correlation between bird migration and the weather. While the last winter was notable here for the continued cold weather, with snow on the ground for a longer uninterrupted period than usually, the second half of February brought us milder and sunnier weather than in other years. As if unable to resist the lure of such fine days the Bluebirds appeared on the 18th, when two were seen, whereas in other years they only appear between the 10th and 15th of March. On the 20th five were seen, which were warbling and enjoying themselves in a way that almost led one to believe that spring was here in earnest and not only up to one of its not infrequent deceptions. The Robin appeared on the scene on the 21st, to disappear again with the Bluebirds on the 23d, when a cold wave came. The other members of the batch of first arrivals here did not seem to be influenced by the warm days, as the first Meadowlark was heard on the 11th of March and the first Killdeer on the 13th, and owing to the situation and location of my home I can see and hear the first of these without fail. The other members of what I would call the first migrant-association to arrive here are the Junco, Song Sparrow, Redwing, Grackle and Cowbird. The 13th of March seems to have been an auspicious day for birds this year, for while passing through Waller's Park, coming from Thatcher's Woods, where I had seen a Cardinal, I saw 30 to 50 Bluebirds, about the same number of Robins and Tree Sparrows, all singing as loud as they could, and heard a Song Sparrow.

On the 29th of March, when it was cold enough the night before to freeze over a bay in the Fox River, I saw a Coot stalking among the alders at the river's edge. On April 17th we flushed five Prairie Chickens in one of the brushy *woods* which cover some of the hills of glacial drift along the Fox River near Cary, Ill. On April 26th the martial music of the first Bobolinks was heard, four days earlier than is customary here.

On the first of May I rediscovered in the Addison woods, the scene of many former rambles, the colony of Night Herons, which I had given up as lost. They had now located a short distance north of their old home, in a growth of small oaks, the twenty odd nests being no higher up than 15 to 20 feet. There were no eggs in the nests yet, and some more nests seemed to be building. If proof were necessary for the statement that Chimney Swifts migrate in day-time, that day brought it conclusively to me. When I left the house in the morning, and even at noon, there were no Swifts about; when we returned at five o'clock there were three to four sailing around overhead. The Lapland Longspurs were in the fields in their usual abundance. Their apparent predilection for Addison is difficult of explanation.

Since early in April there was a flock of about 25 Cowbirds on the campus of the school and on the lawns. Forming a rather formidible flock with English Sparrows they would rise from and settle down on the ground together, no doubt doing much good in eating weed seeds and such insects as were to be found. But the depredations of the Cowbirds showed up with the first nest found This was one of a Meadowlark on the 5th of May, which held three eggs of the rightful owner and two of the parasite. Another egg of the Meadowlark was found just outside of the nest, another a foot away, in the bird's way of approach. Query: Did the Meadowlark *feel* her complement of eggs to be complete, or did the Cowbird maneuver the eggs out, or did she cajole *Sturnella* by other means into laying outside of the nest? I think the first solution is probably the correct one.

The principal find of the season for us, that of Bachman's Sparrow, on May 9th, I have recorded more in detail elsewhere. On the 15th of the month I saw a pair of Lark Sparrows at Cary; this species must be classed as rare in this territory. It may be added that the Dickcissel is notable this year only by its absence. I have not seen a single specimen in places where they were last year. He is apparently striving to keep up his reputation for eccentricity. On the other hand the Goldfinch, Flicker and Redhead seem to be increasing in numbers from year to year. The Robin has been more plentiful than I have seen it during the six years of my resi-

dence in Illinois. I thought that abundance of earth worms, owing to the unusually rainy summer we had, had something to do with it. But, alas for theories! At Arlington Heights, about a dozen miles away, they have been so rare this summer that competent observers say, they did not see one in five or six weeks.

At Cary our camp is within a few yards of the edge of a marsh. Here one can easily make notes on the voices of the marsh heard at night. Beside the clucking and cackling of coots, gallinules and rails the Prairie Marsh Wren (*Telmatodytes palustris iliaca*) sings spasmodically at least till one o'clock. The Warbling Vireo nesting nearby also puts in a few notes from time to time, as if talking in his dreams.

On July 3d, a Bob-white came in the open spaces near my home and called out loudly, the only one I have seen or heard here this year. Too bad that this fine bird is becoming so rare! Also one only is the sum total of Ruffed Grouse seen by me. This was at Miller, Ind., in the sand dune region, where the abundance of wild fruit and underbrush and absence of the *genus homo* furnish this fine primeval denizen of our woods a chance to subsist.

G. Eifrig.

River Forest, Ill.

Announcement

As I find it necessary to move my belongings to another locality, I'm endeavoring to make the task as light as possible. If any colleges, museums or individuals would be interested in acquiring certain specimens, I might arrange things to the mutual advantage of all parties concerned.

EDW. ARMSTRONG,
207 N. Michigan Ave. Chicago, Ill.

Wanted **Specimens of Passenger Pigeon**
Ectopistes migratorius. Mounted Specimens or Skins.
Address stating price, FIELD MUSEUM, CHICAGO.

The Collectors' Journal

An illustrated monthly magazine devoted to collectors of postage stamps. The leading exponent of stamp collecting which no collector can afford to be without.

Subscription Price, 50c per year.
Sample Copy, 5c.

H. L. LINDQUIST, Editor and Publisher.
700 East 40th St., Chicago, Ill.

We operate our own printing plant and are in position to do high grade commercial and publication work at moderate prices. Write us about your next job.

E. T. HADOVEC & COMPANY

POWERS BUILDING, CHICAGO

We have designed a beautiful little piece of inexpensive jewelry, consisting of an

Emblem for Members of the Wilson Club

This little Wilson's Warbler can be mounted on a stick-pin, bar-pin, fob, lapel button, or hat-pin. These may be had of the designer or Business Manager, Wilson Bulletin. We specialize in the manufacture of class pins, medals, class rings and fraternity pins.

E. T. HADOVEC & COMPANY

ATTENTION

Museums, Educational Institutions and Collectors

I am prepared to mount or furnish mounted specimens of mammals, birds, reptiles and fish and to prepare or supply scientific skins and oological specimens.

Our life groups of the above are sought by those who recognize ability and accurateness of workmanship and the perfect condition of material furnished.

Descriptive matter relative to our methods, also references pertaining to our responsibility, will be furnished upon application.

Karl W. Kahmann

Work Rooms and Studio

2457 Lincoln Avenue CHICAGO, ILL.

GLIMPSES of WILD LIFE

If you are in need of illustrations involving bird life or any of the vertebrates let me know your plans.

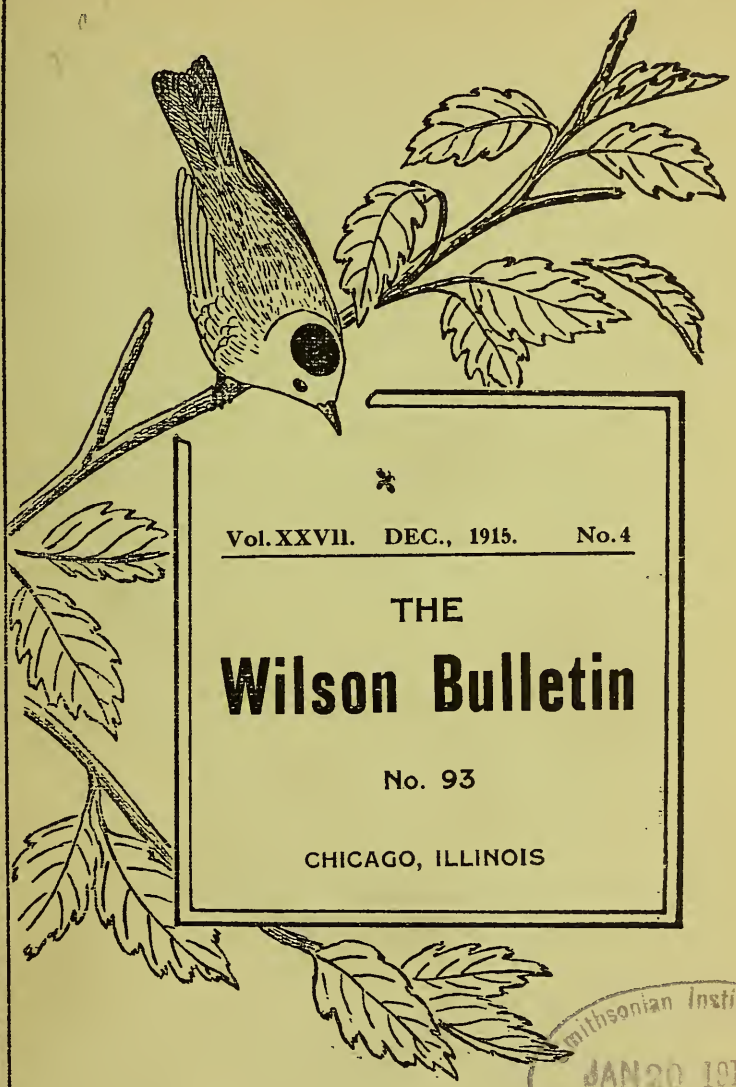
I have many unpublished sketches, drawings and paintings truly depicting the creatures of the air, land and water.

Poses and attitudes are characteristic of the species and should enhance the value of your articles.

KARL PLATH

Artist

3307 West Congress St., Chicago, Ill.



Vol. XXVII. DEC., 1915. No. 4

THE
Wilson Bulletin

No. 93

CHICAGO, ILLINOIS

Smithsonian Institution
JAN 20 1916
National Museum

WILSON ORNITHOLOGICAL CLUB

CONTENTS

The Home of the Great Crest . . Ira N. Gabrielson 421

A Two-Year Nesting Record in Lake County, Illinois
Colin Campbell Sanborn and Walter A. Goelitz 434

A Chronicle of a Tame Olive-Backed Thrush
Cordelia J. Stanwood 448

House Wrens as I Know Them . . Mary E. Hatch 455

An Unintentional Bird Preserve . . C. W. G. Eifrig 458

Five Hours on Butler's Lake . . Walter A. Goelitz 460

Cardinals in Northeastern Iowa . . Mary E. Hatch 462

Editorial 464

General Notes 465

Publications Reviewed 466

Entered as Second Class Matter, May 21, 1914, at the Postoffice at Chicago, Ill., under the Act of March 3, 1879.

Bird-Lore For Christmas

Tell us to whom you wish to send Bird-Lore during 1916, and we will mail them a beautiful colored Christmas Card, signed with your name as donor, and a free copy of our 125-page Christmas number in time to be received on Christmas Day, while Bird-Lore, with its over 500 pages and 12 colored plates, will follow throughout the year.

Annual subscription, $1.00; for Christmas, five subscriptions for $4.00, three for $2.50.

D. APPLETON & CO.,
29 West 32d Street, New York City.

Smithsonian Institution
JAN 20 1916
National Museum

THE
WILSON BULLETIN

NO. 93.

A QUARTERLY JOURNAL OF ORNITHOLOGY

VOL. XXVII DECEMBER, 1915 NO. 4

OLD SERIES VOL. XXVII. NEW SERIES VOL. XXII.

THE HOME OF THE GREAT CREST.

BY IRA N. GABRIELSON.

The Great Crested Flycatcher (*Myiarchus crinitus*) has been practically an unknown bird to me. I saw it during the migrations and for two years knew that a pair was nesting in the tops of a grove of giant cottonwoods. There was, however, little opportunity to learn anything regarding their home life as the dense foliage and undergrowth effectually screened them from view. Imagine then my feelings when a small boy, who lived in the outskirts of the town, stopped me with the following remark (I give his statement verbatim): "There's a bird got a nest in a hole in an old dead tree down in our pasture and its got a brown back and yellow belly and an awful noise." I was interested at once and accompanied my small informant to the tree. As we approached a Great Crest left the hole in the trunk and flew to a neighboring tree.

The nest tree was the remains of an old basswood, a stump perhaps ten feet in height, with a circle of dead branches around the top. The tree was situated in a small glade, and the parents commanded a fine view in all directions. The nest was in a cavity about eight inches deep, and about six feet from the ground. It was lined with feathers, grass, and string, but I missed the traditional snake skin. However,

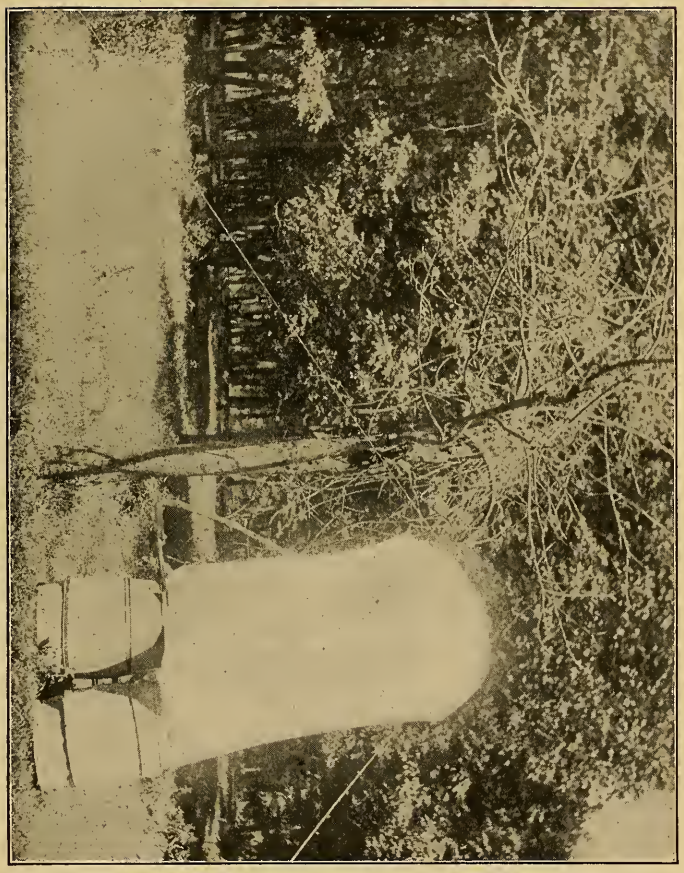
while I was examining the nest my companion volunteered the information that when he found the nest there was an old snake skin hanging from the hole, and that he had pulled it out for fear it would frighten the old birds. On June 29, when I first saw it, the nest contained six eggs.

On July 1, at 7:30 p. m., I visited the nest and found four eggs hatched and the fifth one pipped. On the second, I erected a blind at the nest and camped near by. From this time until July 13, my wife and I spent as much time as possible watching these birds.

The flycatchers were very timid and the blind had to be brought slowly toward the nest. For this reason, it was not until July 5 that it was close enough to make profitable a study of the feeding habits. However, some time was spent in watching on July 2, 3 and 4, and we found that food was usually visible in the beak, although at the distance we were then working we could not accurately determine its nature. On the morning of July 5 the blind was moved to within five feet of the nest and we could readily identify the morsels brought. There were five nestlings, as the sixth egg never hatched. It was removed sometime during July 2.

Beginning the morning of July 5, 42 hours were spent in the blind and about one-half as much time was spent under the trees near by watching the feeding habits of the parents. Some time was spent in the blind each day, with the exception of the tenth, when we were called back to town. Of the 42 hours 12 were on July 7, when we watched from 5:00 a. m. until 7 p. m. The remaining time was scattered through the other six days. No time was spent in the blind on July 13, as some one very considerately stole our blind during the previous night and the birds left the nest before we could get another one ready. We watched for about two hours from a distance of from thirty to forty feet with glasses, but found it very unsatisfactory.

The parent birds looked much alike, but we had one excellent field mark. The male (presumably) had every tail feather perfect, while in that of the female the feathers were



The blind in place at the Great Crest nest.

broken and worn and had many of the barbs missing altogether. We supposed this to be due to the rubbing against the nest walls during incubation. The condition of the two tails is well shown in the photographs, Fig. 2 being of the male and Fig 3 of the female.

Methods of Hunting.

Recalling their usual noisy manners, I rather expected them to make more noise about the nest than some of the other birds studied. On the contrary, they proved to be the least noisy of any of the passerine birds yet studied.

In hunting they spent a large percent of their time on certain low hanging branches in the neighboring trees. The male preferred one in a large honey locust, where he sat well in toward the trunk. The female chose similar branches in an ash and two box elders. One of the parents was invariably on one of these perches, from which he or she could watch the nest. Only occasionally did one of them select a conspicuous perch. When they did so it was either in the top of the nest tree or the topmost branches of a prostrate trunk near by.

The different methods of securing food were interesting and a short account of them follows. The data were obtained by watching from the blind and also from the surrounding timber with the aid of a pair of field glasses.

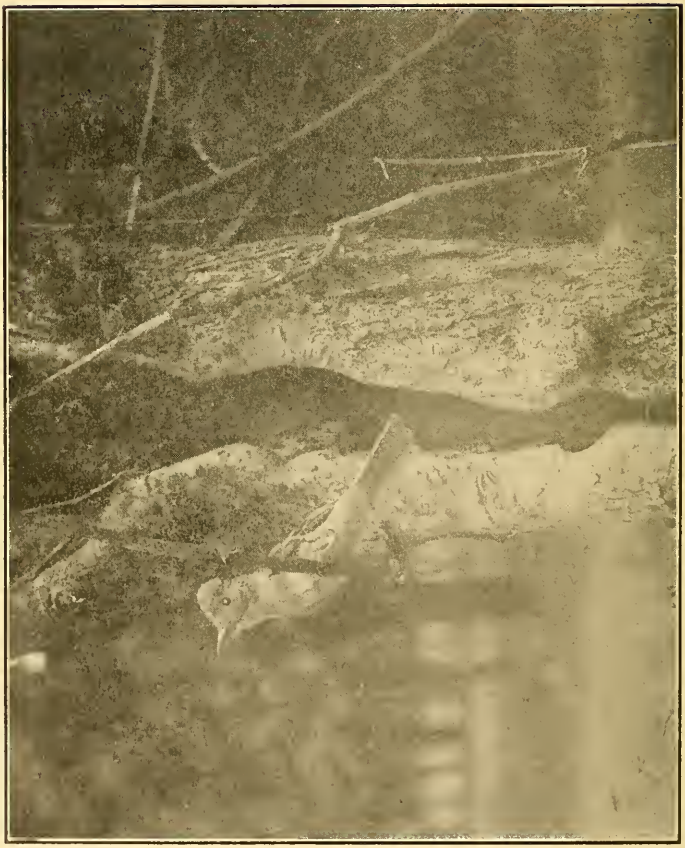
The greatest variety of food was secured in true flycatcher fashion, i.e., by watching for passing insects and darting after them from the chosen perch. After deducting the 109 unknown morsels of food, we have 307 fed which were identified. Thirty-one per cent [1] of these 307 morsels were taken on the wing and included flies, moths, mayflies, lady beetles, butterflies, wasps, dragonflies, and bees. We actually saw

[1] This figure and following per cent are based on the supposition that all of the individuals of the forms included as captured by these methods were taken only in the one way. Thus there may be some error, for the reason that we did not see all of the food secured.

some of each of these forms taken on the wing and their manner of life makes it probable that the majority of them were taken in this way. Some of these if not captured in the first dash, were not pursued further, but others, notably butterflies and moths, were followed until secured. Once a large bald-faced hornet came into the blind and succeeded in getting out just as the female came from the nest and alighted on a branch. She made a dash and captured him before he was fairly started. Flies, dragon flies, and bees were, as far as we observed, caught in very short dashes. The only lady beetle taken under our observation was one which had been crawling about on the bark of the nest-tree and which was captured as it flew away.

The second method was somewhat different, although the insects were still taken while the flycatchers were on the wing. This method was to hang on rapidly beating wings before a leaf or branch and pick insects from it. They were observed to secure larvæ, daddy-longlegs, long-horned grasshoppers, and some spiders in this way. Some of the spiders were found to be taken by the third method. Excluding spiders, the other forms which were observed to be taken only in this manner, total 103, or about 33% of the identified food. Some of the daddy-longlegs were picked from the outside wall of the blind.

The third method was a variation of the first. The Great Crests sat on a low branch until they saw an insect in the grass, when they would drop to the ground and secure it. (This does not include those picked from the grass without alighting.) Crickets, grasshoppers, beetles, and spiders were observed to be taken in this way. When they missed the insect, they never hopped or ran along the ground, but rose into the air and dove down into the grass again. One watched catching a grasshopper near the foot of the nest tree went through this performance several times before the prey was finally secured. Probably most of the three forms were taken by this method while spiders were also taken by the second.



The male on guard on his favorite perch. Note the perfect condition of the tail.

APPROACH TO THE NEST.

The study of these birds was made more difficult because of their silent approach to the nest. Other species previously studied made more or less noise in coming to the nest, but the Great Crests flew silently to some branch and then, after looking about, dropped to the nest opening and disappeared within. During the entire proceeding the only sound audible in the blind was the faint scratching of their nails as they entered the nest, and then it was too late to determine the contents of their beaks. This explains the large percentage of unidentified food in the table. Only by keeping a close watch on the three or four usual perches could one be sure of detecting their approach. They usually sat on these limbs for several seconds before entering the nest and could be held there for some time by a slight noise from the blind.

The female almost invariably came to the same branch and flew back to it on leaving the nest, but the male was more variable and had several perches, which he used according to the direction of his approach.

TABLE I. FOOD OF THE NESTLINGS.

FOOD.	J.4	J.5	J.6	J.7	J.8	J.9	J.11	J.12	To.
Fly	2	.	2	5	4	2	.	.	15
Moth	1	5	10	7	2	.	1	3	29
Green larvæ	.	16	17	25	23	5	.	2	88
Unidentified	.	15	19	24	16	14	5	16	109
Wasp	.	1	1	2	3	3	2	.	12
Long-horned Grasshopper	.	2	2	3	6	3	2	.	18
Dragon fly	.	2	3	3	2	1	.	.	11
Red Admiral butterfly	.	1	3	3	.	5	1	.	13
Lady beetle	.	2	1	.	.	.	.	.	3
Beetle	.	2	7	6	1	1	.	.	17
Daddy-longlegs	.	1	3	3	.	.	.	.	7
Grasshopper	.	1	7	18	5	.	.	3	34
Spider	.	.	5	18	5	.	.	.	28
Cricket	.	.	2	4	3	.	.	.	9
Egg shell (?)	.	.	.	2	1	3	3	.	9
Butterfly	.	.	.	1	1	2	.	.	4
Bee	.	.	.	4	1	.	1	.	6
Mayfly	.	2	1	1	.	.	.	.	4
Total	3	50	83	129	73	39	15	24	416

There were numerous species of flies in the undergrowth and trees and we were unable to determine definitely the species fed. We thought several times that we recognized robber flies, and once or twice saw the parents hunting among the cattle, around which the stable flies swarmed. The majority of the moths were small, dull colored forms, which we could not identify. Once or twice a large black species was brought, and once a medium-sized underwing (*Catocala sp?*) was given to the nestlings. Geometrid larvæ furnished the bulk of the larval forms, but many were fed which were clearly different, and yet they could not be named. The only wasp definitely referred to any species was the bald-faced hornet (*Vespa maculata*), caught as it flew from the blind. Only the individuals recognized as long-horned grasshoppers were placed under that head, all others being entered as grasshoppers. The red admiral (*Pyrameis atlanta*) was very common and seemed to be easily captured by the Great Crests. The other four butterflies were fritillaries (*Argynnis sp?*).

We were almost positive that on several occasions the nestlings were fed pieces of egg shell. Once while the blind was within three feet of the nest a piece at least one-half inch square was brought. It was broken and cracked and the shell membrane (?) could be seen holding the parts together. I suspected that this substance was egg shell and asked my wife (without telling her what I thought) if she had noticed it. She replied that she had seen it fed, but could not determine its nature. A day or two later she remarked that she had identified it and stated that it was egg shell. Whether the identification was correct or not, there was plenty of opportunity for the birds to obtain the shells, as two camps and the remains of innumerable picnics were near the nest.

Food, Actions and Fate of the Nestlings.

As the nestlings were in the nest cavity and not visible from the blind we could not determine the distribution of the food to them. The striking thing in the feeding, at least

to us, was the large percentage of larvæ fed. They comprised the largest single item of food, being 21.15% of the total. Grasshoppers under two heads in the tables, were 12.50%; spiders, 6.73%; moths, 6.97%; unidentified, 26.20%; red admirals, 3.12%; flies, 3.60%; beetles, 4.08%; hymenoptera (bees and wasps), 4.32%; and the remiander, 11.30%, were miscellaneous insects.

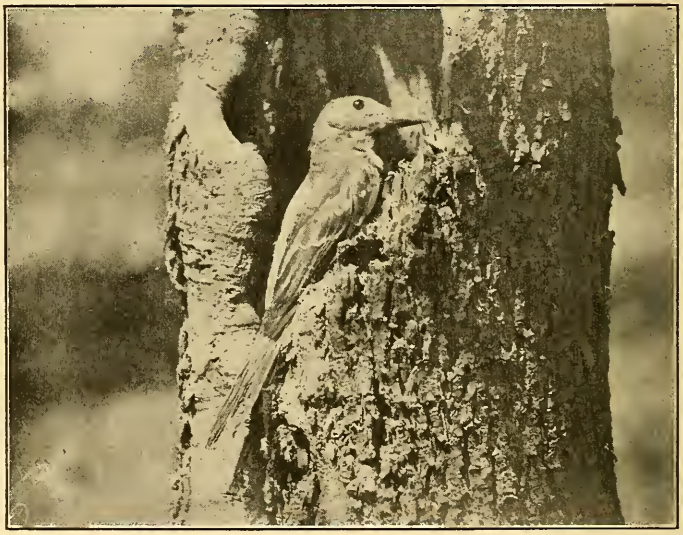
Although we did not keep continuous watch at the nest, we spent some time each day from the time of hatching until the departure of the young, except on the tenth. From the second to the fourth we were still too far away to determine the nature of the food, but we could see it projecting from the beak on almost every visit. We saw no evidence of regurgitation either here or at a phoebe's nest, which we watched for a few hours.

During the study we saw the parents carry away the excreta 41 times and devour it only once. Much of it was undoubtedly removed during our absence from the blind, but there must have been much of it devoured while the birds were concealed from our view in the nest.

The nestlings were very noisy and restless. They kept up a constant peeping from the first day. On July 7 one or more of them began to utter a loud clear call or whistle, *"twee-eet,"* which was occasionally answered by the parents from a distance. From this time we could hear the parents whistling while far away from the nest, but for the most part they remained as silent as ever.

On July 8 the nestlings began to climb restlessly about in the nest. We had cut the edge down a little in order to obtain a better view and there was a large natural crack to the bottom of the nest. They crawled part way up the sides of the cavity and fell back to the bottom again. On the morning of July 9 we found only three nestlings in the nest. A search revealed one dead at the foot of the tree; but the fifth was never found, although we hunted for yards around in the short grass. Several times on July 9 they fell out of the nest

and started away through the grass. Fig. 4 was taken at this time to show the feather development. Whatever the cause of this action they quieted down after July 10 and remained in the nest until July 14. Fig. 9 was taken on the afternoon of July 13 and they were gone the next morning at 7:00. At this time they were very active and, after trying for an



The female at the entrance to the nest. Compare the condition of the tail with that of Fig. 2.

hour to get them to perch on a branch, we posed them on the hand. The one on the left was not able to fly well, but the other two had gained good control of their wings.

As the nestlings were hatched on the evening of July 1 and left either late July 13 or early July 14, they were twelve or thirteen days old at the time of departure.

MISCELLANEOUS ACTIONS OF THE PARENTS.

There was a certain dignity about every action of the parents which could not fail to impress the observer. They never made any outcry as we approached the nest, but flew silently away, often no farther than the other side of the nest tree, and remained watching us. Even when the blind was erected there was no apparent excitement, but only a careful watch kept on it until they decided to accept its presence. This was in decided contrast to the actions of such birds as the Catbird and Red-winged Blackbird, which have the habit of arousing the entire neighborhood when a blind is erected at their nests.

When the nestlings were taken out of the nest on July 13 they made a great fuss and the parents answered them for a few moments. This noise soon ceased and the adults, particularly the female, made a desperate attack on our party, flying about our heads and at our faces. Finally, even this stopped, and the female alighted on a branch about fifteen feet away and kept silent watch of the proceedings.

We were much interested in the feeding of the nestlings while they were on the ground. On the afternoon of July 9 all three of them were out of the nest and the parents fed them repeatedly. Here we again notice that the adults never hopped or walked, but after feeding one flew to the next one, even if it was only a few inches away. After the young were placed back in the nest, both parents often flew into the grass in search of them.

The calls were few in number. We occasionally heard the usual whistle, sometimes given loud and clear, and at other times barely audible in the blind. The only other sound which we heard from them was a series of low notes used in the early part of the nestling period to get the nestlings to open their mouths. It is impossible for me to describe it, but it somewhat resembled the noise produced by drawing a rusty nail from a board.

When angry the Great Crest elevated his crest, and when

in pursuit of other birds snapped his mandibles together loudly and rapidly.

On some occasions the food given the nestling was too large for it to swallow. When this happened the parent removed the morsel and quickly crushed it by snapping the mandibles together on it.

The parents never entered the nest together. Several times the female was at the nest opening when the male appeared on a limb above her. As he started to drop to the nest open-

The nestlings at the age of 8 days, showing the development of the wing quills at this time.

ing she flew away, allowed him to feed the nestlings, and returned to feed her morsel when he left. Once she was in the nest feeding when he appeared on the edge. He put his head into the opening and "screeched," at which she darted out and permitted him to enter.

The old rotten tree seemed to furnish a strong attraction to the woodpeckers and chickadees on account of the many larvæ under the bark. A Chickadee, Downy Woodpecker,

Red-headed Woodpecker, and Flicker came to the tree at various times. The woodpeckers were driven away by the Great Crests, but they paid no attention to the Chickadee. The Downy and Red-head tried the trick so often practiced by the Red-heads on the Kingbirds, when they meet along the country roads. Whenever the Kingbird discovers a Red-head on a telephone pole he immediately tries to attack him. The woodpecker simply dodges around the pole and goes on about his business. The Kingbird takes his position on a wire and goes to catching insects, all the time keeping one eye on the woodpecker. Sooner or later the Red-head starts for another pole and the Kingbird gets the chance he has been

The nestlings at 12 days. Taken July 13, the day before they left the nest.

waiting for all the time. Both the Downy and Red-head tried this trick on the Great Crests and successfully worked it as long as they only had one of the parents to contend with, but came off second best when the other parent entered the game.

A Cowbird came into the nest tree while the female was in the nest, sneaked to the nest opening and looked in. What she saw was evidently not reassuring as she quickly backed away and flew off.

A squirrel crossing the glade was vigorously attacked and made to scamper for refuge to the nearest tree. Once safely there he turned and expressed his opinion of the Great Crest in shrill and violent language.

The most vicious performance which I witnessed was an attack on an immature Bronzed Grackle. He blundered into the nest tree while the male was sitting on one of the topmost branches, and had hardly settled himself when he was struck a violent blow from behind and sent sprawling to the ground. He lay there squawking for a few moments and then started to fly away. Hardly had he lifted himself from the ground when another blow on the back of the head caused him to turn a complete somersault into a small bush. He crawled out on the side opposite the nest and flew away without being further molested. The Great Crest used both beak and wings in the attack and the second blow took several feathers out of the grackle's head.

A TWO-YEAR NESTING RECORD IN LAKE COUNTY, ILL.

BY COLIN CAMPBELL SANBORN AND WALTER A. GOELITZ.

(Photographs by Walter A. Goelitz.)

Lake County lies on Lake Michigan in the north-east corner of Illinois. That part of Lake County in which the following records were made, extends along Lake Michigan from the Illinois-Winconsin state line at the north, to the Cook County line on the south, and west about ten miles to the Des Plaines River, and in the northern portion, farther west to the McHenry County line. This territory may be divided into five separate tracts: (1), the sand dunes and marshes of Beach in the the north-east corner; (2), the bluffs

and ravines extending along the lake; (3), the Skokie Valley Slough, about two miles west of the lake, with its adjoining woods and fields; (4), the heavily timbered region in the Des Plaines River Valley, about six miles west of the Skokie; (5), and the prairie and lake country west of the Des Plaines River.

A very good description of Beach may be found in the "Auk," volume XXIV, number 2, in "Ornithological Conditions in Northeastern Illinois, with Notes on Some Winter Birds," by the late John Farwell Ferry. In the marshes of this region were found the Bitterns, Rails, Blackbirds, and Green Herons, and among the dunes, the Sparrows.

Along the shores of Lake Michigan extends a bluff, cut every mile or so by a ravine. It is, in some places, just a clay or sand bank inhabited by Bank Swallows and Kingfishers, while in other places it is covered by brush and a few trees. The beach varies in width from seventy-five feet to none at all. Most of this bluff property is occupied by residences, but in some places there are still fields, small groves of trees, and woods. In the brushy fields and groves the Yellow Warbler, Redstart, Wood Pewee, Towhee, Goldfinch, and Red-eyed Vireo nest, and in the thicker woods there are many Crows and a few Hawks.

The Skokie Valley Slough, which lies to the west, extends south from about the middle of the county, where it is only a few feet wide, to the county line, where it is more than a mile wide. Here in the Marsh proper were found the Bitterns, Rails, Red-winged Blackbird, Long-billed Marsh Wren, and Swamp Sparrow. In the fields and woods on either side there are Green Herons, Sparrow Hawks, Maryland Yellowthroats, Marsh Hawks, and the Sparrows.

Farther west is the Des Plaines River Valley, which region is heavily wooded. The Des Plaines River runs south the entire length of the county and is about eight or nine miles from the lake. It was here that we found most of our Hawks' nests, besides innumerable Crows' nests. Most of our trips to this region were made in the early spring.

Cedar Waxwing nest. Lake Co., Ill. W. A. Goelitz.

The land west of the Des Plaines River is mostly prairie, dotted here and there with small lakes, or a small patch of woodland. In this open country are Prairie Chicken, Killdeer, Black Tern, and many Vesper Sparrows.

Robins, Bluebirds, Woodpeckers, House Wrens, Brown Thrashers, Catbirds, and Blue Jays can be found anywhere where there is a suitable nesting site. Meadowlarks, Bobolinks, Song and Field Sparrows are in every field. Cedar Waxwings, Goldfinches, and a few Cuckoos can be found in brushy fields and second growths. At a small lake, Butler's Lake, were found the Yellow-headed Blackbird, Coot, Mallard, Pied-billed Grebe, and Florida Gallinule. These birds could not be found nesting anywhere else.

Note:—The numbers at the end of each paragraph represent the number of nests of each variety found, with eggs or young, in the two years.

1. Pied-billed Grebe (*Podilymbus podiceps*), July 2nd, 1915. Nest with seven eggs found at Butler's Lake. Merely a floating mass of decaying reeds. Situated in a thin growth of cat-tails. 2.

2. Black Tern (*Hydrochelidon nigra surinamensis*), July 2nd, 1915. Two sets of three eggs found at Butler's Lake. Nests were mats of reeds located among the cat-tails near the shore. The nests were easily found by the actions of the old birds when closely approached. 5.

3. Mallard (*Anas platyrhynchos*), July 2nd, 1915. The only nesting record we have, is a female and ten downy young, seen on a small lake in northwestern Lake County.

4. American Bittern (*Botaurus lentiginosus*), May 30th, 1914. On this date, a female was flushed from a nest containing four eggs. It was a platform of matted reeds over a foot of water, along the edge of the Skokie Marsh, just west of Highland Park. 4.

5. Least Bittern (*Ixobrychus exilis*), July 8th, 1915. Nest and five eggs at Butler's Lake, situated in a bed of dead reeds along the shore. Other nests, found at Beach on June 7th, 1914, with four eggs, and in the Skokie Marsh, on June 13th, 1915, also with four eggs. This bird is not as abundant in the extensive Skokie Marsh as at Beach and Butler's Lake. 12.

6. Green Heron (*Butorides v. virescens*), June 2nd, 1915. Nest at Beach in clump of willow trees. Made enirely of dead willow twigs and contained five eggs. We have been told that a pair of

Bobolink nest. Lake Co., Ill. W. A. Goelitz.

Black-crowned Night Herons formerly nested in this exact location. 2.

7. King Rail (*Rallus elegans*), May 19th, 1914. Nest with set of twelve eggs located in Skokie Marsh, five feet from a ditch of running water, and a hundred feet from a public road. Other dates May 23rd, 1914, eleven eggs; June 7th, twelve eggs; June 13th, 1915, two nests with eleven eggs each. 7.

8. Virginia Rail (*Rallus virginianus*), June 14th, 1914. The only nest found was in a small slough in the middle of a field. A small platform of reeds with two eggs. This bird and also Sora is very common during migrations, but is rarely seen in the summer.

9. Florida Gallinule (*Gallinula galeata*), July 2nd, 1915, a set of nine eggs, just hatching, and on July 8th, a set of four eggs, also hatching, were found at Butler's Lake. The females were flushed from both nests, which were masses of floating reeds. 2.

10. Coot (*Fulica americana*), July 8th, 1915. Many Coots seen on a small lake, but only one nest found. It was in a small open area, among the reeds along the shore, and held three eggs.

11. American Woodcock (*Philohela minor*), May 5th, 1914. Nest in the woods at Ravinia about 100 feet from a house, and seventy-five feet from an electric and a steam road. It was a slight depression at the base of a small tree in a bed of moss, lined with a few dead leaves. On May 6th, the nest was again visited—the eggs had hatched and the young gone. The Woodcock seems to be becoming more common in Lake County. 4.

12. Prairie Hen (*Tympanuchus a. americanus*), May 22nd, 1915. While visiting on a farm in the prairie country, a farmer showed us two nests of this rare bird containing 12 and 14 eggs respectively. They were in a hay-field a half mile from his barn, and a quarter mile apart. One bird flushed readily, while the other could almost be touched before leaving. The nest with 12 eggs was destroyed, but the other hatched safely. 2.

13. Mourning Dove (*Zenaidura macroura carolinensis*), May 22nd, 1915. A nest composed of a few sticks and containing two eggs was found on an island in the middle of Cedar Lake. 4.

14. Marsh Hawk (*Circus hudsonius*), May 18th, 1914. A set of five eggs found in a patch of weeds on dry ground in Skokie Marsh. Nest composed wholly of weed stems to form a pad about five inches thick. The same pair, supposedly, nested here this year, but the nest was flooded by a three days' raise of water.

15. Cooper's Hawk (*Accipiter cooperi*), May 9th, 1915. A nest was found on this date with one egg. On the seventeenth of May it held four eggs, and on the next visit on June 17th, two of the eggs were just hatching. The nest was about 45 feet up in a red

King Rail nest. Lake Co., Ill. W. A. Goelitz.

oak, and was built of sticks on top of an old crow's nest, and was lined with a few pieces of bark. 5.

16. Red-shouldered Hawk (*Buteo l. lineatus*). This is our most common hawk. We found eleven nests with eggs in two years. Earliest date for eggs is April 6th, and latest is May 21st. In climbing to these nests we were attacked only once.

17. Sparrow Hawk (*Falco s. sparverius*). May 8th, 1914, a nest containing five eggs was found about 20 feet up in a dead stub along the edge of a field. On May 19th, 1915, four eggs were taken from this same stub. There was a bluebird's nest above the cavity occupied by the hawks. On the 29th of June the cavity was occupied by a set of Flicker eggs. 4.

18. Screech Owl (*Otus a. asio*). May 20th, 1914, a nest containing two bad eggs and one young bird was found in a natural cavity in a red oak. The tree was in the front yard of a home in the center of Highland Park. 1.

19. Yellow-billed Cuckoo (*Coccyzus a. americanus*), July 26th, 1915. Nest was nine feet up on a horizontal branch of a Hawthorn tree. When the nest was first found, it contained one egg, and was so thin that the egg could be seen through the bottom. On the 26th the nest held a full set of three eggs, and was much thicker than when first found, showing that eggs are sometimes laid before the nests are completed, and also that the laying of an egg does not stop the birds from completing the nest. Made of twigs and grass. 2.

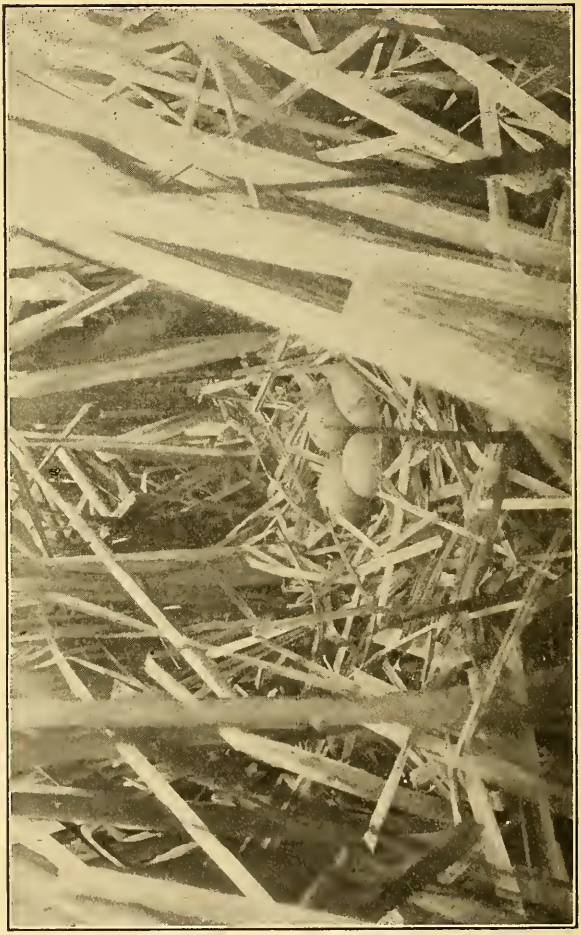
20. Black-billed Cuckoo (*Coccyzus erythrophthalmus*), August 10th, 1914. A nest was found in oak scrub, about four feet up, and contained two young, which were about half grown. The nest was a conical structure of twigs lined with a thick pad of oak leaves. A few years ago a nest was found containing three eggs of the Black-bill and one of the Yellow-bill. 4.

21. Belted Kingfisher (*Ceryle alcyon*). The only nest of this bird found was destroyed by the slumping of the bluff along the lake during a heavy rain.

22. Downy Woodpecker (*Dryobates pubescens medianus*), June 10th, 1915. Two young just out of the nest, were found on the ground at Ravinia. The Downy is rather an uncommon summer resident in Lake County.

23. Red-headed Woodpecker (*Melanerpes erthrocephalus*), June 7th, 1914. Set of five eggs found in hickory stub in vacant lot between two houses. A queer set, with one runt, one normal, and one extra large egg was found on May 25th, 1914.

24. Northern Flicker (*Colaptes auratus luteus*), June 12th, 1915. A large set of 12 eggs, one of which was a runt, was found on



Bittern nest. Lake Co., Ill. W. A. Goelitz.

this date at Beach. The nest was about twenty feet up in a pine stub. Besides this two large sets of ten have been found in former years. 10.

25. Chimney Swift (*Chætura pelagica*), June 22nd, 1915. Nest and five eggs found about four feet down in a chimney. The female would not leave the chimney, but remained clinging below the nest. 4.

26. Ruby-throated Hummingbird (*Archilochus colubris*), June 25th, 1915. Nest about 35 feet up in white oak tree. Six feet above it was a Redstart's nest with two eggs. Nest made of plant down, and covered on the outside with lichens. On the 23rd the nest limb was cut off at the trunk, but as the nest contained only one egg, the limb was wedged tightly between two branches and when revisited on the 25th the female was found sitting on two eggs, despite the fact that the nest had been moved three feet. 1.

27. Kingbird (*Tyrannus tyrannus*), June 10th, 1914. Three eggs were found in a nest in the top of apple tree. The nest was made mostly of grass. Another nest was found on a horizontal oak limb, which also had three eggs. 6.

28. Crested Flycatcher (*Myiarchus crinitus*), June 2nd, 1915. The only nest we have been able to locate, although this bird is common throughout the county, was in a natural cavity forty feet up in the broken top of a red oak. The three eggs were stained yellow as if there had been a fourth egg which had been broken. The nest contained the usual piece of snake skin.

29. Phœbe (*Sayornis phœbe*), May 4th, 1914. Nest composed of moss, grass, and mud, plastered on a jagged rock in culvert. Five eggs. This nest was collected and then the birds succeeded in raising two broods. They nest in this culvert every year. 10.

30. Wood Pewee (*Myiochanes virens*), June 28th, 1915. Thirty-two feet up in the horizontal crotch of a white oak, a nest was found; made of grass and covered with lichens and cobwebs. It contained three eggs. 12.

31. Blue Jay (*Cyanocitta c. cristata*), June 15th, 1915. While searching for a Migrant Shrike nest, we found this Blue Jay nest, which held six eggs, about ten feet up in a hawthorn tree. Another set of six eggs was found May 2nd, 1914, in a thick cedar tree. 25.

32. American Crow (*Corvus b. brachyrhynchos*), April 9th, 1915. A nest was found in a leaning oak tree, made of sticks, grass, and horse hair, and held the rather unusual number of seven eggs. At least fifty nests found in two years.

33. Bobolink (*Dolichonyx oryzivorus*). On June 2nd, 1914, we found a dark chocolate colored set of six eggs in a nest of grass,

lined with horse hair, and placed on the ground at the base of a clump of clover. On June 12th, 1915, another nest containing six light gray eggs was found. 10.

34. Cowbird (*Molothrus a. ater*), May 14th, 1914. A Towhee nest found on this date, contained one Towhee egg and eight Cowbird eggs. About fifty of the nests found during 1914 and 1915 held Cowbird eggs.

35. Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*), July 2nd, 1915. The only nesting colony of these birds found is at Butler's Lake, where on this date, a nest with four eggs was found. It was composed of dead marsh grass, woven about several reeds to form a basket. 7.

36. Red-winged Blackbird (*Agelaius p. phœniceus*), May 23rd, 1914. A colony of thirty pairs was located in a small slough just off the Skokie Marsh. On June 5th, 1915, a nest was found which held five badly incubated eggs. At least 200 nests of this very abundant bird have been found.

37. Meadowlark (*Sturnella m. magna*), May 5th, 1914. Nest and six eggs found in the Skokie Valley. All nests found here have had the entrance on the south side. 8.

38. Baltimore Oriole (*Icterus galbula*), June 5th, 1914. A nest containing young was found in a maple tree 20 feet up, along a roadside. Another nest was seen while being built, on May 23rd, 1915. 4.

39. Bronzed Grackle (*Quiscalus quiscula æneus*), May 23rd, 1915. On an island in Cedar Lake were found nine nests, all of which contained young. Eleven nests were found on this island last year. 20.

40. English Sparrow (*Passer domesticus*). One nest on May 14th, 1915, held six eggs and was built in a cavity in an oak tree, from which they had driven a pair of Bluebirds.

41. Goldfinch (*Astragalinus t. tristis*), August 27th, 1915. Nest in a sumach bush in a brushy field, containing six eggs. It was made of fine grass and thistle-down, woven very compactly together. Earliest date for eggs July 21st, and latest September 2nd. 30.

42. Vesper Sparrow (*Poœcetes g. gramineus*), July 16th, 1914. In the corner of a bunker on the Old Elm Golf course, a nest with four eggs was found. Although many players passed here daily, these eggs hatched safely. 3.

43. Chipping Sparrow (*Spizella p. passerina*), June 12th, 1915.

This bird is very uncommon in Lake County, so we were very much surprised to find three nests at Beach. One held three

young, and the others, three and four eggs respectively. A number of old nests were also found.

44. Field Sparrow (*Spizella p. pusilla*), May 9th, 1915. A female was flushed from a nest and four eggs, in a small hawthorn bush six inches from the ground. A rather late date for eggs of this bird is August 14th, when a nest with one fresh egg was found. 7.

45. Song Sparrow (*Melospiza m. melodia*), May 30th, 1914. Nest containing 5 eggs and one Cowbird egg was seen in a bed of dead weeds along the Skokie Marsh. Late date: nest and four eggs July 20th, 1915. This and the former are, outside of the English, our two most common sparrows. 6.

46. Swamp Sparrow (*Melospiza georgiana*), June 11th, 1915. Five eggs. Nest composed entirely of grass and deeply hollowed, situated in dead cat-tails about one foot above the ground. These birds are very plentiful in the Skokie Marsh, and their nests are extremely hard to find. 11.

47. Towhee (*Pipilo e. erythrophthalmus*), August 9th, 1914. We found this nest while looking for Waxwings. It was two feet up in a clump of hazel bushes, and held three eggs. We have noticed that the early nests are placed on the ground, while the later ones are always elevated. 5.

48. Cardinal (*Cardinalis c. cardinalis*), June 10th, 1914. Nest in elderberry bush, about six feet up, containing three eggs. About five years ago, a pair of Cardinals appeared in Highland Park, and since then, they have been increasing so that now there are at least five pairs breeding here every year.

49. Rose-breasted Grosbeak (*Zamelodia ludoviciana*), May 18th, 1914. The only nest of this bird found was in a hawthorn tree ten feet up. It contained three eggs and two Cowbird eggs. These birds are scarce in this locality.

50. Indigo Bunting (*Passerina cyanea*), July 26th, 1915. Nest one foot above the ground in a clump of weeds beside a field of wheat, containing three badly incubated eggs. A scarce bird most years in Lake County. 2.

51. Scarlet Tanager (*Piranga erythromelas*), July 17th, 1914. This bird is about as common as the Rose-breasted Grosbeak. The one nest found was on the end of an oak branch, and held three eggs.

52. Purple Martin (*Progne s. subis*), July 15th, 1915. There were both fresh eggs and young birds, ready to fly, in a house, which we examined today. There are many colonies of these birds about here, and they take very quickly to the houses put up for them.

53. Cliff Swallow (*Petrochelidon lunifrons*). The only colony which we have discovered in Lake county is on a barn a few miles west of Highland Park. The birds were fairly common here five or six years ago, but the English Sparrows are rapidly driving them away.

54. Barn Swallow (*Hirundo erythrogastra*), June 12th, 1915. Of the many colonies found, the most interesting was in a lumber shed near Waukegan. We counted twenty-five new nests and as many old ones. A set of six eggs was found here.

55. Tree Swallow (*Iridoprocne bicolor*), May 23rd, 1915. Two nests were found on this date: one of which contained one egg, and one which was being built. The birds have come to our attention only lately, and have been found to be more common in open country to the west than along the lake. At all nests the birds showed no signs of fear. 4.

56. Bank Swallow (*Riparia riparia*), June 2nd, 1914. At this date only incomplete sets were found in a large nesting colony of these birds in the bluff near Lake Forest, where they have nested, to our knowledge, for the last ten years or more. There are about 150 pairs in this colony.

57. Cedar Waxwing (*Bombycilla cedrorum*), July 26th, 1915. A nest found at Ravinia on this date contained six eggs. They breed very commonly here in brushy situations. Other dates are two sets of five each on August 2nd, 1915, and two other sets of five on August 4th, 1915.

58. Red-eyed Vireo (*Vireosylva olivacea*), June 17th, 1914. Nest found in thick wood on edge of Skodie Marsh in fork of witch-hazel bush, and contained three young and one Cowbird. This was the only nest we found where the young hatched. All the others were deserted because of the Cowbird eggs laid in them.

59. Warbling Vireo (*Vireosylva g. gilva*), July 2nd, 1915. We first met with this bird on May 23rd, 1915, when it was heard singing. Not recognizing the song, we hunted the bird out with some difficulty, and found this Vireo. On July 2nd, 1915, while visiting at the same place, we were shown a Vireo's nest, about 35 feet up in an oak tree, which proved to be a Warbling Vireo's nest, and held one young bird, just ready to fly. About a mile from here a bird was heard singing a number of times, but no nest was found.

60. Yellow-Warbler (*Dendroica æ. æstiva*). On June 13th, 1915, two nests were found with four eggs each. These birds are very abundant breeders in the brushy fields along the lake bluff and the Skokie Marsh. This warbler, the Redstart, and the vireos seem to be imposed upon by the Cowbird more than the other birds. 12.

61. Oven-bird (*Seiurus aurocapillus*). We have been unable to find a nest of this bird, although they are common enough in the deep, damp woods throughout the county. On June 29th, 1915, however, we were attracted by the distress cries of a pair of Oven-birds, and found the cause to be a snake which had eaten one young bird and was getting ready to catch another which was perched on a nearby bush. The nest from which they had flown could not be found.

62. Maryland Yellow-throat (*Geothlypis t. trichas*), June 17th, 1915. Nest situated on dry ground in bed of weeds; made of grass, lined with horse hair, and contained five eggs. Another nest with three eggs and two Cowbird eggs, was placed six inches above a foot and a half of water in some cat-tails. The Yellow-throat is abundant throughout the Skokie Marsh, but the nests are rather difficult to locate in the deep grass. 3.

63. Redstart (*Setophaga ruticilla*), June 22nd, 1915. A nest with three eggs was found in some hazel bushes along a well traveled road. It was about six feet up, and could easily be reached from a wagon on the road. This warbler nests commonly in Lake County, and places its nest anywhere from three to forty feet above the ground. 9.

64. Catbird (*Dumetella carolinensis*), June 9th, 1915. A set of five eggs was found about three feet up in some thick brush; nest of twigs lined with weeds and grass. Another set of five was found three years ago. This is a very common bird in this locality.

65. Brown Thrasher (*Toxostoma rufum*), May 22nd, 1914. A nest located on the ground in a patch of may apples held five eggs. In our experiences, sets of five have been very common in the last two years.

66. House Wren (*Troglodytes a. aëdon*), June 3rd, 1914. A bird house placed in a front yard held seven eggs on this date. They nest very commonly in houses put up for them. 12.

67. Long-billed Marsh Wren (*Telmatodytes p. palustris*), June 15th, 1915. In the middle of the Skokie Marsh on this date we found a nest of the usual globular shaped construction of cat-tails, which contained seven eggs. This wren is very abundant in all the marshes. On June 12th, 1915, out of the fifty nests examined on Beach, only ten contained eggs. 25.

68. Chickadee (*Penthestes a. atricapillus*), May 15th, 1914. A nest with two eggs was found in a stump two feet above the ground. Many holes are partly excavated or even lined with feathers or hair every spring, but rarely any eggs are laid.

69. Wood Thrush (*Hylocichla mustelina*), May 30th, 1914. Two nests, each about eight feet up in saplings, on the edge of the Sko-

kie Marsh, held four eggs and one Cowbird each on this date. The Wood Thrush is a fairly common breeder around here. 6.

70. Robin (*Planesticus m. migratorius*), May 8th, 1914. Nest with four eggs. Very common breeder. 25.

71. Bluebird (*Sialia s. sialis*). One pair of birds laid three sets of five eggs on the following dates, in the same place, when they were robbed: May 4th, May 19th, and June 27th, 1914.

THE CHRONICLE OF A TAME OLIVE-BACKED THRUSH.

BY CORDELIA J. STANWOOD.

One day while following a trail through the woods that lead to a boiling spring, I came upon the nest of an Olive-backed Thrush in a low fir. The bird was lining it with dead leaves. The following day the nest was completed, and in due time the bird was brooding four beautiful green-blue eggs, speckled with golden-brown. I visited the nest when it was time for the young to appear and found four nestlings. When the young would be about ten days old (July 10, 1909) I started for the spring once more, both hope and fear contending in my soul. The nest was more or less exposed. The nestling bird has many foes.

Although I made good time, it seemed as if my feet were weighted with lead, so doubtful was I of the sequel. When I actually beheld four sturdy young Thrushes in the nest I could scarcely believe that what I had been anticipating so long had actually come true.

In order to learn as much as possible about the Olive-backed Thrush, I had planned to take a young Thrush home for a time, if I were so fortunate as to obtain one. The nestlings were already standing to strengthen the legs, as young Thrushes and Robins do at times, one or two days before leaving the nest. It seemed wise to leave my Thrush in the nest as long as practicable. Still there was every indication of a storm. The nest was more than a mile from home. If I did not secure a nestling at once, it seemed doubtful if I

should have another opportunity, yet they made such a goodly picture in the nest that I could not bear to disturb them. After debating the question a few minutes, I concluded to borrow a Thrush.

There was no choice of nestlings. As I reached out my hand toward the nest, the four hopped over the side in different directions, each giving vent to a startling chirp. I pursued the one that sped up the pathway and thought myself very fortunate to overtake him.

The parent birds came to the succor of the young immediately with cries of *whit! whit! whit!* but remained in concealment. I placed the little bird in the corner of the grape basket which I carried and covered him with my handkerchief. He began to call *schree!* in a sweet, silvery whistle, and struggled to get free. It was almost 9 o'clock in the morning when I made the capture. The day was hot; I was obliged to go home by a longer way as there was another bird's nest to visit. I set out with trepidation.

Upon finding some strawberries in a hayfield I took the little bird out of the basket to feed him. He trembled, relaxed his claws, closed his eyes and nestled in my hands. After this we walked a number of miles through the woods, the little bird standing on the edge of my basket, or on my sleeve. Sometimes I put him down on the ground while I let him catch mosquitoes. Once or twice he dodged under a leaf or hid in the grass, but these were the only indications of fear that he now showed, aside from the fact that he refused to open his beak for food. He ate two strawberries, taking them bit by bit with the tip of his nib.

It was noon when we reached the house. I stood the Thrush on the sill of a screened window. Seizing an ant's egg,[1] a bit of earthworm, or a piece of grasshopper with the tips of the scissors, I tried to tempt the little bird to eat. He did nothing but call lustily. Then I placed him on my knee,

[1] At this date the grasshoppers are just beginning to come. Most of them are under a half inch in length. Ants' eggs are very plenty.

put my hand around him and moved the tempting morsel in a circle around his beak. It was of no use. The bird continued to make a loud, automatic chirp.

I, too, was troubled. Suppose that he should starve to death! If I carried him back to the woods, would the parent birds be in the vicinity of the nest? Thus I meditated. Still the little fellow refused to eat.

In the meantime a child came who begged me to visit a nest which she had found in a hayfield more than a mile and a half distant. I argued that the little bird would not eat until he became sufficiently hungry. I could not hurry the matter by standing by. I went with Dorothy.

It was 4:30 p. m. when I returned. I sat on the mat where the food was in the middle of the room and took up the scissors. The moment that the Thrush heard the scissors click he flew from the windowsill to the floor and opened his beak for food. He ate two earthworms, cut up into bits, then he perched on my knee and preened his feathers, pulling off fragments of the quill casings. In the future he never hesitated to take food when he was hungry.

As it began to grow dark the Thrush mounted the lilac branch which I had placed for a roost in a large packing box in the corner of the room for him, laid the tips of his beak on his wing and went to sleep.

At 3:30 the following morning the little visitor began to call for food. I carried him to a spring not very far from the house, but he was not ready to bathe. He hopped around while I dug earthworms, and ate four with a relish.

Yesterday, instinct prompted the little bird to hide among the grasses and under the leaves; today, instinct prompted him to perch high in a tree. Here he slept as if he were a part of the great out-of-door world. After eating he always took a nap. The second evening, when the Thrush went to roost, he really tucked his beak under his wing.

At this stage the Olive-backed Thrush has large, intelligent, hazel eyes that look black in shadow; he is exquisitely colored. The upper parts are olive, speckled with golden-buffy;

the underparts are buffy on the throat and breast, and silvery-white on the belly. The breast and belly are spotted with black. The feet and legs are a mixture of flesh-color and brown-gray. Speaking colloquially, the legs of the Olive-backed Thrush are very long in proportion to the body. The beak is brown-gray, and the throat is lined with a rare golden-yellow. The bird is light and graceful in all his motions.

On the third day of his sojourn in a strange land, the Thrush perched on my hand and snuggled against my throat. When I wrote in my notebook, he insisted on standing in the book. I caressed him; he then perched on my arm.

It took me four days to teach the young bird to bathe in the basin of water in the house. Although I put pebbles in the bottom for him to stand on, he always looked askance at that basin. At last, however, he consented to take a thorough bath and flapped his wings vigorously. (I have since found that young Thrushes will go to a brook and bathe on sight of the water after they have been out of the nest a few days.)

The fifth day was, perhaps, the most memorable of all these days with the wonderful little Olive-backed Thrush. On this day he sang a baby Thrush song several times. It was not complete and very husky, but it was most fascinating. I could barely catch the strains in the adjoining room. A person would never notice it in the woods.

Again, while I was writing in my notebook the interesting facts of the day, the Thrush flew from the window, alighted in my book, and began to peck at my pen. I suppose that he mistook it for the scissors with which I fed him, but it looked as if he wished to keep me from writing. His next move was to back across the page until his tail feathers touched my hand. I smoothed his feathers with one finger — his favorite caress. Then he turned and presented his breast. I thought that the whole pretty scene might have been an accident. Twice I returned the Thrush to the window sill and the second and the third time he came in like manner. At last he perched on my shoulder, but continued to chirp for attention. After this, whenever opportunity offered, he came to be petted.

This same day he picked up ants' eggs from the floor, likewise an ant, and showed an automatic tendency to pick up everything.

Each time he picked up an egg I said "good," and he made a little squeal of delight. It seemed as if he waited for me to say "good" each time before taking another egg. When he picked up anything his manner was most ludicrous. First he opened his beak far too wide, then he twisted his mandibles awry while he examined the morsel first with one eye, and then with the other, while he kept up an excited twitter, just as young birds do when the parents carry food to the nest. The little squeals of delight, coupled with the acts of the baby Thrush seemed to say nothing less than "Do you see what a brave boy am I?"

As time went on, he ate larger and larger numbers of ants' eggs. One day when I was out, he picked up thirty ants' eggs from the windowsill; on my return he flew into my basket, selected a grasshopper and ate it. He cared less for earth worms as he grew older.

During the outings that the Thrush and I frequently took, he bathed in the brook and nibbled off bits of grass and plants. He occasionally picked up an earthworm. When he heard a noise or a strange sound, he laid his feathers very flat, and strained up his neck to listen. At such times he looked very small and wild. His sunbaths were always short. He preferred the shade after a minute.

The Thrush was constantly doing interesting things. One evening he begged for a high perch. I tacked a second lilac branch over a door and he was satisfied.

On another occasion he pecked at the handle of the little silver spoon in his cup of water. It gave a ringing sound. He repeated it several times. I think that he went to the cup for water as some tame Thrushes that I had later used to peck at the cup when they wanted water, and at the paper containing steak when they wanted steak.

While he was with me, a terriffic thunderstorm, accompanied by rain and hail, seemed to come from three directions

and meet over the house. The wind lashed the branches of the trees. The young Thrush, perched in an open window, sang his Thrush song over and over during the storm.

The day after the thunderstorm I entertained a caller for nearly two hours. The Thrush became so excited that he sang all the time that my friend was present. From that time on he sang very little.

One morning I left a basket of fragrant, old-fashioned roses on the couch. They were across the room from where the Thrush cuddled half asleep. He flew to the bed, hopped all around the roses and pecked softly at leaves, buds and petals. He acted as if he were caressing the petals with his beak.

When the Thrush was eight days old, he ate so much that the united efforts of the children and myself were not sufficient to keep him in fresh insect food. I began feeding him some steak. He was very fond of it, as well as bread and milk. After eating, he usually gave several comfortable little grunts. Always when he had sufficient food, he ran rapidly away.

After studying the Thrush twelve days in the house, the thirteenth morning I placed him in a bit of evergreen woods above a swale with a brook running through it. Here I cared for him while he learned the ways of the wood folk.

I purposely did not give the Thrush much food as I knew that his salvation depended on his own exertions. I fed him once in about three hours.

In the afternoon I was at the spring with some friends. The Thrush heard our voices and in a moment drifted like a bit of thistle down to the shoulder of one of the young ladies.

We fed him and he caught mosquitoes and grasshopers for our delectation. When he caught a grasshopper he tore the legs and wings off before eating it.

It is surprising to see what the woods will do for a young bird. The Thrush learned in one day to use his beak with great rapidity and precision. He flew into the air a foot for mosquitoes and sometimes a yard or more for other insects. He ate so rapidly that I ceased feeding him with the scissors.

At 8:00 p. m. I went to the pasture and placed the Thrush on a high perch. He made many changes. It took him a long time to select a satisfactory roost. It was characteristic of the bird.

I usually found the bird in the vicinity of the clump of evergreens where I first placed him. In the beginning he flew to me and begged for food. I let him follow while I went to hunt for grasshoppers. He showed a tendency to keep to the cover of bits of brush, small bushes and clumps of ferns and bracken. The bird caught mosquitoes, picked up moths, ants, grasshoppers and spiders continually.

Later the Thrush waited to be called. When I said "Come, Pet!" he answered *chu! chu!* in a mere whisper.

One evening it was dark and foggy at 7:40. The wind was south of east. There was rain in the air. The Thrush begged so hard for food that I had to go over the clumps of hay scented ferns on my hands and knees to find the grasshoppers hiding at the bottom. He killed everything that he ate. He spent a very long time oiling his feathers, which confirmed me in the opinion that it would rain before morning.

Finally, he insisted on following me home. Three times he perched on my head. At last I ran and hid behind some bushes and under this cover escaped. I spent fifty-five minutes in a futile attempt to put him to bed. The next morning the Thrush was dry, although there were fog showers during the night. He was feeding, but came at my call. I then introduced him to ant hills.

At dawn the next day, before I arose, I heard a noisy rout of Crows in possession of the pasture. (I suppose that they were feeding on grasshoppers, which were common this year.) I hurried to the brook and called and hunted for the Thrush for more than an hour before he answered. He was very frightened and had hidden in a high pine.

I felt that the tame Thrush was thoroughly educated. He knew where to drink and bathe, where to find mosquitoes, moths, spiders, ants, ants' eggs, grasshoppers and earth-

worms. The wealth of a strong, young bird was at his disposal.

It was 8 in the evening of our fifth day out-of-doors. The woodlands were full of Olive-backed Thrushes and Hermit Thrushes that had come down to the swale to drink and bathe with the Robins. I called the Thrush a full half hour before he answered me in the usual grove. He came reluctantly. He was nearly as large as a full-grown bird. His tail was two inches long. When I called, the woods seemed alive with Thrushes. To my "Come, Pet!" the Hermits responded *chuck! chuck! p-e-e-p!* and the Olive-backed answered *whit! whit! whit! whit-ye, whit-ye-er!* The Thrushes were in full song. The warm, misty, moonlit woods fairly palpitated with their wonderfully beautiful strains.

The young Thrush partook of thirteen small grasshoppers. As I put him on a high perch for the night he floated out into the swale. I looked for him carefully in the low spruce where he seemed to alight. He was not here, but I heard the plashing of his wings in one of the sedgy little pools. The Olive-backed Thrushes called persistently, insistently, a few feet from where I stood.

The moonlight, the mist, and the birds were bewitching, but it was growing late and I had to tear myself away.

After this exeprience I called and hunted for the Thrush several days, but he never came again to my summons. He had heard "the call of the wild" and responded!

HOUSE WRENS AS I KNOW THEM.

BY MARY E. HATCH.

I have always been especially fond of birds, but particularly is this true of the little house wren.

While I watch eagerly each spring for the return of the birds, and rejoice in seeing each new species come back, yet there is a little more joy experienced upon seeing my favorite wrens once more than in beholding all the others.

Usually I have been content merely to watch the wrens in their nest building; their squabbles among themselves and with other birds, becoming their protector when necessary. Truly, these little mites are most companionable, original and amusing.

However, in the spring of 1912, I had both an unusually good nest for closer observations and the time to devote to it. This particular box was not the bird's first choice by any means. Three others were tried, only to be given up, and when it was accepted finally, some of the twigs taken to the other boxes were laboriously hauled out of the little holes and carried to this new nest box, notwithstanding the fact that twigs were to be found in abundance within a few feet of the accepted box.

The nest was begun May 4th and the first egg was laid May 12th. One egg each day was deposited in the nest, until there were eight. They began to hatch the 30th—one each day for seven days. The eighth never hatched.

Tiny spiders were fed to the young wrens first; then very small bugs; then larger ones; and finally beetles, crickets, larger spiders, moths, worms, etc., were crammed into the yawning mouths. The fledglings grew very fast, leaving the nest the 18th of June.

The very next day the same pair of wrens began a new nest in another box on the same porch. The first egg was laid the 23d, which shows the birds were not so fastidious in its construction, for it took but four days to complete it, while the first required eight. Five eggs were laid this time, and five new wrens began to shift for themselves in the course of two weeks or so.

Wrens will build near your house or within a shed if there is any chance to get into it. They do not always demand a carefully made nest box. In fact, sometimes they seem to prefer simpler quarters. One year I placed a branch from a tree in my summer kitchen, and at its end had a good box with a door the size of a quarter of a dollar in it. I find this size is just right to admit wrens and shut out sparrows.

This arrangement was all right so far as the path to the nest went; but, instead of building in the box, the birds went a little beyond and built upon an overturned scrub brush lying on the scantling.

I know of a pair once placing their nest in a clothespin basket and on top of the clothespins. Of course they were left unmolested to raise their brood. Another built in an empty syrup can.

I find wrens like to have a good approach to their summer homes. They appreciate a ledge, limb, or anything upon which they can first alight.

This year (1915) I had four nest boxes—two under porches and two in trees. The one in the arbor vitae tree was chosen first; then one on the back porch; then one on the front porch; but the one in the elm tree, for some reason, was not used.

There was something about the nest on the back porch that was not altogether satisfactory, for they began a nest there several times, but left to start new ones within the cornice of the roof. These places were one after the other boarded up, thus shutting them out; and finally they began on the porch nest in earnest. They raised six birds here, and found porches so satisfactory, they took the other one for their second nest, where they raised but three birds.

The largest brood any of my birds has ever had is seven; but a neighbor had nine in one nest this summer. My last brood left here July 31st—somewhat late; but there was one in another neighbor's yard that stayed until August 20th.

Wrens are most sociable, and show very plainly that they like people. They seem to enjoy the coming and going—even though the screen door bangs quite often. During those days when they are feeding the little ones, they do more or less scolding of the people whom they have adopted; but do we not likewise grow impatient and irritable with our best beloved when we are busy, anxious and harassed? With all our faults they love us still; and will build nests about us every season if we put up boxes, drive away cats, sparrows

and other enemies—thus showing them we are interested and want them for neighbors.

McGregor, Iowa.

AN UNINTENTIONAL BIRD PRESERVE.

BY C. W. G. EIFRIG.

Some twenty-eight years ago Mr. Edward C. Waller, of River Forest, bought a tract of a hundred acres of land in the northern part of this village. This is now one of the finest suburbs of Chicago, being separated from the metropolis by Oak Park, another beauty spot in the outskirts of the great city, but at that time largely a more or less swampy prairie. Although bought for the sole reason to be later on sold again, Mr. Waller immediately started to improve the land by planting great quantities of fine shrubs and trees on it, in straight lines, to border the streets that would later have to cross the tract, and in irregular groves and clumps. Nearly all native species of shrubs and trees that can be enumerated, together with many exotic ones, found places in this new beauty spot. It is even said that the owner bought out two nurseries to get enough material. Although at that time houses were few and far between, yet the owner soon found that men and boys would come and cut down some of his largest trees for firewood or other purposes, and the evergreens, probably, for Christmas trees. To stop this he erected an eight-foot barbed wire fence around the tract of eighty acres, which is now between Chicago Avenue and Division Street, north and south, and between Lathrop and Park Avenues, east and west. Several men were employed summer and winter to keep the place in order. A house and barn are in the center of the tract. All this has now, after a quarter of a century, resulted in as fine a private park and botanical garden, so to say, as can be imagined, as idyllic a spot as can be made away from hills or mountains and in the absence of brook, pond or lake. For perfectly idyllic conditions of scenery these are undoubtedly indispensable. In May and June especially the many species of *spiraea, lonicera,* lilac,

viburnum, forsythia, barberry, Japanese quince, and many others bloom at their best and waft their fragrance through the air; when the buck-eye and catalpa illuminate the foliage with their exquisite candelabra of white and vie for first place in the race of beauty with double-flowering cherries and crab-apples, with the lovely pink of the red bud or Judas tree flaming up in between, it is certainly an aspect of fairy-like beauty.

Then also the birds are at their best. For the selfsame fence that has proved the salvation of the trees and bushes in the fairy garden, has likewise kept out men and boys with guns, and the house cat is also practically unknown. This gives the birds the privacy and security, which they cherish so much; furthermore, the many fruiting shrubs and trees supply all necessary food for those that care to stay. While the number of migrants, though large enough, is not as large as it would be if the Desplaines River, with its wooded banks and its south and north course were not so near, the number of nesting birds is abnormally large. A census of them made June 3d had the following results: Six Bluebirds, 8 Robins, 18 Brown Thrashers, 8 Catbirds, 11 Field Sparrows, 2 Song Sparrows, 4 English Sparrows, 1 Goldfinch, 4 Cowbirds, 5 Baltimore Orioles, 3 Meadowlarks, 4 Bobolinks (near the north fence, where large pastures adjoin), 1 Nighthawk, 10 Flickers, 1 Red-headed Woodpecker, 6 Blue Jays, 1 Crow, 5 Wood Pewees, 1 Red-eyed Vireo, 4 Chimney Swifts, 6 Mourning Doves, and 1 Pheasant (probably Mongolian), a total of 108 pairs. While in some cases the same bird may have been counted twice, or in others, as in the Doves, both birds of a pair counted, yet I feel convinced that the result is rather below the truth than above. Undoubtedly there are more Redheads, Vireo, Crows and Blue Jays nesting than we counted; probably also more Goldfinches, and I think Indigo Buntings, Cuckoos and Cedar Waxwings have added themselves later to the list. Besides, we saw a Willow Thrush, an Olive-sided Flycatcher and a Woodcock, which did not nest there, as likely also as not the Nighthawk and the Pheasant. On the morning in question, we also did not see

Bachman's Sparrow, of which a pair or two were here and no doubt bred, having been seen by the writer repeatedly from May 9th to July 2d.

Professor W. W. Cooke, of Washington, writes me that the number of nesting birds for "Waller's Park" is higher than the average for this vicinity. This shows again what protection does for birds, unintentional even as it was and is in this case. I may add that the method used in getting the above result was the one advocated by the Biological Survey of the Department of Agriculture at Washington, viz. several observers went through the tract, beginning at 6 o'clock in the morning until finished, walking in paralliel lines, the supposition being that at that time of the year and in that part of the day the birds seen will be males—as was borne out by this census in the case of those species in which the sexes can readily be told—and each male representing a breeding pair.

River Forest, Illinois.

FIVE HOURS ON BUTLER'S LAKE, LAKE COUNTY, ILL.

BY WALTER A. GOELITZ.

This lake covers from thirty to forty acres and is surrounded by a few wood-lots, pastures, house yards, and a public road. The margin is shallow and swampy, with cat-tails and reeds extending in from twenty to two hundred feet from the hilly ground surrounding the lake. The birds of Butler's Lake are protected the year around and for that reason many can be found there that are scarce or wholly wanting in similar regions in Lake County.

I spent only two hours there on my first trip on July 2, 1915, but had the good luck to find twelve nests. The first of these nests was that of a Yellow-headed Blackbird and contained three eggs. This was a find of some note to me, for not only was it the first of its kind I have ever found, but also because Butler's Lake is the only place in Lake County where these blackbirds breed. In the extensive Skokie Marsh,

which covers several thousand acres and which is located just five miles to the east, no Yellow-heads can be found, even in migration time. During the remainder of the two hour's hunt two or more nests were found containing four eggs and three young, respectively. Besides these nests there were some twenty young birds scrambling through the reeds or sunning themselves on dead cat-tail stalks.

The next nest found was that of the Pied-billed Grebe with five eggs. It was situated in the center of a small open area in the reeds along the shore. The eggs were uncovered. Another nest of this grebe was found in a more open situation on the other side of the lake and contained seven warm, uncovered eggs. About two hundred feet away from the first grebe's nest was found a Florida Gallinule's nest and set of nine eggs. Most of the eggs were pipped and one egg was nearly hatched. This egg I put in my pocket, where it hatched, and afterward the young was given to Mr. Henry K. Coale, of Highland Park, Ill.

Within a few feet of the Gallinule's nest a Least Bittern was flushed from its nest in a small clump of dead rushes. The nest was a foot above the water and held four fresh eggs. Another similarly situated nest was found a little later containing four eggs. A few hundred feet further on about fifteen Black Terns were flying around a certain spot where the reeds grew far out into the lake. They were much alarmed at my presence and kept up an incessant screaming. Three Black Tern nests were located, two containing three eggs each and the other, two eggs. All three were composed of a small mat of rushes floating on the water, and in one the eggs were lying in a quarter of an inch of water. The last nest for the first day was a Kingbird's in an oak tree near the lake with three well incubated eggs.

In wading through the marshy edge I flushed many other birds, such as King Rails, Sora, Coot, Mallard, Bittern, Redwing, Green Heron, and Long-billed Marsh Wren. I saw one female Mallard with ten young and also many empty or dummy nests of the Marsh Wrens, beside other large nests resembling those of the King Rail and Bittern.

In order to take some pictures of these nests I again went out to Butler's Lake on the eighth of July. I spent three hours in taking pictures and in finding new nests. Only a few of the pictures were good, because of the high wind that was blowing and shaking the nests. On this day two more Black Tern nests, with two eggs and two young, were found in the same part of the lake that those on July 2 were found. One of the young swam out of sight before I could focus my camera. Another Florida Gallinule nest was found with four pipped eggs and some shell chips, from which I suppose others had hatched and had already taken to water. Of the Least Bittern, four were located. One had five eggs, two held four eggs each, and a fourth had four broken eggs. Two Yellow-headed Blackbird nests with three eggs each, one with one egg, and another with four well grown young were seen; also one Red-winged Blackbird's with four young. In a very open situation between two beds of reeds my first Coot nest was discovered containing three eggs.

I consider Butler's Lake to be an oasis of water birds in Lake County. The whole county is thoroughly hunted fall and spring, therefore the wealth of bird life is due wholly to protection and not especially to food supply, for there are over a hundred lakes in Lake County similar in situation and adaptability for water birds to Butler's Lake.

Ravinia, Illinois.

CARDINALS IN NORTHEASTERN IOWA.

BY MARY E. HATCH, M'GREGOR, IOWA.

The first cardinal seen in this part of the country, so far as I know—at least the first to be recorded, was on December 11, 1906. It appeared in the yard adjoining the one where we lived, in the north end of this little bluff bordered town.

The ground was well covered with snow; so it is not hard to imagine my surprise and delight, upon looking out of my kitchen window, in seeing this beautiful dash of red against the white background. And what was he doing? Feeding

with English sparrows! A true aristocrat at the table of a plebeian.

A year or so passed and no further sight of a cardinal. Then we began to see them occasionally. Soon they were more in evidence, and now (1915), they are comparatively common. I have them every winter feeding at my table; and at least twenty other people in town have them as well. They are not the same ones, for once, when we had a pair here, we telephoned to a friend at the other end of the town, who had a bird table, too, to see if she happened at that moment to have any. She reported three.

Like robins, cardinals prefer to build near houses. One built in an arbor this spring and right in the path leading to the house, where many were coming and going.

One of our bird lovers reported the following delightful experience this spring: She was climbing one of the nearby wooded bluffs, and came upon a cardinal family. The old birds were instructing the fledglings. It was not quite clear what the male was at that moment trying to teach; but probably it was a lesson in voice culture. All were on the ground, while the teacher was whistling a low sweet melody. His head was lowered to the ground, and all the little ones were imitating this pose.

Cardinals winter well in this locality and come out in the spring in good condition. They sleep mostly within close branches of evergreen trees. Corn is their favorite food, though they will eat almost anything that other birds will. They can crack a kernel of corn as easily as a squirrel does a nut.

We hope the cardinal grosbeaks have come to stay; and mean to do everything in our power to make them know how welcome they are.

We have a great many birds here both winter and summer. Conditions are favorable. We have the grand old Mississippi River and its tributaries to furnish water; we have the surrounding tree-covered bluffs. Then we have a people here who appreciate the worth of birds, giving them food, shelter and protection.

THE WILSON BULLETIN

A Quarterly Magazine Devoted to the Study of Birds. Official Organ of the Wilson Ornithological Club

Edited by **LYNDS JONES**

PUBLISHED BY THE WILSON ORNITHOLOGICAL CLUB, AT CHICAGO, ILL.

Price in the United States, Canada, and Mexico, One Dollar a year, 30 cents a number post paid. Price in all countries in the International Postal Union, $1.25 a year, 40 cents a number. Subscriptions may be sent to Lynds Jones, Oberlin, Ohio, or to Mr. P. B Coffin, 3232 Groveland Avenue, Chicago, Ill.

OFFICERS FOR THE CURRENT YEAR

President: Dr. T. C. Stephens, Morningside, Sioux City, Iowa.

Vice-President: Geo. L. Fordyce, Youngstown, Ohio.

Secretary: Thos. L. Hankinson, Charleston, Ill.

Treasurer: P. B. Coffin, 3232 Groveland Ave., Chicago, Ill.

Editor "The Wilson Bulletin": Lynds Jones, Spear Laboratory, Oberlin, Ohio.

Business Manager: Gerard Alan Abbott, 1543 East 61st, St., Chicago, Ill.

EDITORIAL

The distressing delay in mailing the September number of this Bulletin must be laid at the door of those who handled the issue as freight. The shipment went far astray, just how far may not be known. It was nothing for which the officers of the Club can be held responsible, and nothing that could have been foreseen.

The Third Annual Meeting of the Wilson Ornithological Club will be held in Columbus, Ohio, December 28 and 29, in the Horticultural Building of the Ohio State University, in conjunction with the American Association for the Advancement of Science. There is every indication that there will be a large attendance.

The editor is obliged to defer the reviews of the ornithological magazines until the next number. They contain papers which should receive more attention than it would be possible to give them in the space and time at our disposal with this number.

Hereafter the "Bluebird," which has been under the management of Dr. Eugene Swope, Cincinnati, Ohio, will be issued from Cleveland, Ohio, under the auspices of the Cleveland Bird Lovers Association. It will be edited by Mrs. Elizabeth C. T. Miller. We wish it success in its new environment. The new address is 1010 Euclid Avenue, Cleveland, Ohio.

GENERAL NOTES

NORTHERN PHALAROPE IN MAHONING COUNTY, OHIO.

A Northern Phalarope (*Lobipes lobatus*) was seen by the writer at Pine Lake, Mahoning County, Ohio, October 9th, 1915.

The bird spent part of the time on the shore feeding, and part in floating on the choppy surface of the lake, about two feet from the shore. It took to the water possibly for recreation or diversion, as it was not seen to take food while in the water.

It was most pleasing to see this small shorebird swimming with such surprising ease and grace. This is the first known record for this species in Mahoning County.

John P. Young.

SCREECH OWL OCCUPYING A BOX.

Early this spring I constructed from fir lumber a large nest box according to design No. 19 in U. S. Bulletin, "Bird boxes and how to build them." This box is large enough for sparrow hawks and screech owls, and was privately dedicated to the use of a screech owl, who seemed to be staying in the neighborhood. Until recently there were no signs of occupancy. The past few weeks the owl has been giving his peculiar vocal selections, morning and evening, from the group of trees where the box is hung, and a few days ago I was fortunate enough to find him peering out into the dusk, awaiting a favorable time to begin his nocturnal hunting. Since then he can be seen every evening, his oddly shaped head having the appearance of a kitten looking out of the hole.

A couple of largest size Perry boxes have hung in these trees for a year or so, but either the openings are not quite large enough, or the locations are in some way unsuitable, as they have never been used. The board box now occupied is placed in a thick part of the tree, facing southeast. This direction protects the opening from our coldest winds, as well as the heat and sunshine of most of the day. I feel much gratified to know this interesting and valuable feathered guest has accepted my hospitality, and joined the other birds who make our yard their winter home.

Although screech owls are common enough in all towns, reports of their occupying boxes are not often seen, and I venture to mention this instance to the Wilson Club, for the benefit of others who may be cultivating their acquaintance.

Iowa, Nov. 1915. T. H. W.

CARDINAL AT WYALUSING, WIS.

I must record that today, January 8, we observed a Cardinal on the high bluff overlooking the Mississippi, in what is now State Park lands, here at Wyalusing. We have had them for several winters, but always in the lowlands, but today he was here eating the crumbs not eight feet from our door. We are going to take note of his stay with us.

These few lines enclosed were suggested by his appearance. Perhaps you can find use for them in the Wilson Bulletin.

I intend soon to write what influence on the bird life here the establishment of the park has had.

"Oh, dear Kentucky Cardinal,
You come with scarlet coat,—
With plumage gay; with merry call,—
Each trill a perfect note!

"Why come you now, oh Cardinal,
When all the woods are bare,
When snow and ice fast bind the creek,
And frost is in the air?

"Is it because, my Cardinal,
This old world seems so drear,
You come with song and plumage gay,
To make a note of cheer?"

(MISS) ELMA GLENN.

Wyalusing, Wis., Jan. 8, 1915.

PUBLICATIONS REVIEWED

Wild Bird Guests. How to Entertain Them. With chapters on the destruction of birds, their economic and æsthetic values, suggestions for dealing with their enemies, and on management of bird clubs. By Ernest Harold Baynes. With 50 photogravure illustrations from photographs. New York: E. P. Dutton and Company. 1915.

To those who are acquainted with the exceptional ability of the author of this book to attract the birds even to the familiarity of inducing them to a light upon his person and even take food from his lips, this book comes as a most welcome teacher of methods and results. The scope of the book and its mission are well shown by the titles of the three parts into which it is divided. Part I states the reasons "Why Birds Need Protection," in four chap-

ters. Part II states "Why it is Worth While to Give Protection," in terms of "Money Values" and "Æsthetic and Moral Values." Part III is concerned with "How We Can All Help to Protect Birds." An Appendix is concerned with directions for organizing bird clubs for purposes of protecting birds. The book is certain to be of great value in the campaign for better protection to birds. L. J.

Conclusions from a Study of Ornithology. By Howard Jones, A.B., A.M., M.D., Circleville, Ohio. 1915. Read before the Audubon Club of Columbus, Ohio, February, 1915. Published by the Author.

The meat of this published address, which covers 22 printed pages, may perhaps be indicated by the following quotation: "The proper study of ornithology will give a new outlook upon the universe, a new attitude toward everything, because, we shall lay aside our emotions and act upon our intelligence. We shall know we are hunting the mystery of life and matter for ourselves, and, that every fact learned is an effort to state that mystery in terms; that every observation and discovery help us to spell some new word. 'As we advance we shall see clearly that TRUTH, JUSTICE, LOVE and AFFECTION are not eternal abstract principles shining like sunlight from a great distance across our path.' We shall see clearly that life carries in itself these qualities. That they are potentially in every living cell, 'that they are in us, move with us, and that their horizon is our own.'" L. J.

Simultaneous Action of Birds: A Suggestion. By Winsor M. Tyler, M.D. From The Auk, Vol. XXXII, No. 2, April, 1915. Pp. 198-203.

The argument is based upon the assumption that there is actual simultaneous action of birds, and the 'telepathic action' is invoked to account for the supposed simultaneous action. The only proof which we have that there is actual simultaneous action is the human eye, unless there be actual photographs—which the writer has not seen. It seems unlikely that the human eye could be relied upon in the case of such rapid motion as the quick turnings of flocks of birds so often exhibit. Indeed, it would be the exceptional photograph which would prove reliable here. That there is a quicker response to fright stimuli in birds than in man there is probably no question, but that such response is instantaneous is open to serious question. L. J.

The Birds of Dickinson County, Michigan. By Frederick M. Gaige. Reprinted from Sixteenth Report Michigan Academy of Science. Pp. 74-91.

The list was compiled between June 30 and August 24, both in-

clusive, 1909, while the writer of this report was attached to a field party sent out by the Michigan Geological and Biological Survey to investigate the biology of the region about Brown Lake, Dickinson County. The report deals with "Habitats and Habitat Distribution of Species," "Migration," "Effect of the Burn on the Local Distribution of the Birds," and the systematic annotated "List of Species." There are 88 species listed. The paper is a welcome contribution to the distribution and ecology of the region in question. L. J.

Results of the Shiras Expedition to Whitefish Point, Michigan. Birds. By Norman A. Wood. Reprinted from Sixteenth Report Michigan Academy of Science. Pp. 55-73.

"Whitefish Point is in Chippewa County, in the northern peninsula of Michigan." The birds are first grouped according to habitat, and then arranged in systematic order, with annotations, the dates of occurrence being given. We particularly commend the method here employed of grouping the species according to habitat preference. The paper is a valuable contribution to local faunal and floral literature. L. J.

Biological Division Zoölogy. From the Summary Report of the Geological Survey, Canada, for the calendar year 1914. By P. A. Taverner. With a repaging, 1-15.

The particular part of this report with which we are concerned is the report of "The Athabaska-Great Slave Lake Expedition, 1914," by Francis Harper, and the "Canadian Arctic Expedition, 1913-14," by R. M. Anderson. The whole report is devoted to biology in general. It is worth noting that Mr. Taverner concludes that the region which the expedition to Athabaska-Great Slave Lake visited was "found to lie almost entirely within the Canadian zone." The U. S. Biological Survey has regarded it as Hudsonian. Mr. Harper gives a list of 85 species of birds, and Mr. Anderson a list of 52. The vegetation is also commented upon, and lists of other Vertebrate animals given. L. J.

Propagation of Upland Game-Birds. The National Association of Audubon Societies. Bulletin No. 2, April, 1915. By Herbert K. Job. Price 25 cents.

This Bulletin contains detailed directions for propagating quail, ruffed grouse, wild turkey, and pheasants, with brief remarks on prairie chicken and doves and pigeons. Three pages on "Control of Vermin" conclude the Bulletin. It is interesting to note that the author includes domestic cats under the head of vermin. Numerous illustrations add value to the paper. It is a paper that can be highly commended. L. J.

Announcement

As I find it necessary to move my belongings to another locality, I'm endeavoring to make the task as light as possible. If any colleges, museums or individuals would be interested in acquiring certain specimens, I might arrange things to the mutual advantage of all parties concerned.

EDW. ARMSTRONG,
207 N. Michigan Ave. Chicago, Ill.

Wanted **Specimens of Passenger Pigeon**
Ectopistes migratorius. Mounted Specimens or Skins
Address stating price, FIELD MUSEUM, CHICAGO.

The Collectors' Journal

An illustrated monthly magazine devoted to collectors of postage stamps. The leading exponent of stamp collecting which no collector can afford to be without.

Subscription Price, 50c per year.
Sample Copy, 5c.

H. L. LINDQUIST, Editor and Publisher.
700 East 40th St., Chicago, Ill.

We operate our own printing plant and are in position to do high grade commercial and publication work at moderate prices. Write us about your next job.

E. T. HADOVEC & COMPANY

POWERS BUILDING, CHICAGO

We have designed a beautiful little piece of inexpensive jewelry, consisting of an

Emblem for Members of the Wilson Club

This little Wilson's Warbler can be mounted on a stick-pin, bar-pin, fob, lapel button, or hat-pin. These may be had of the designer or Business Manager, Wilson Bulletin. We specialize in the manufacture of class pins, medals, class rings and fraternity pins.

E. T. HADOVEC & COMPANY

ATTENTION

Museums, Educational Institutions and Collectors

I am prepared to mount or furnish mounted specimens of mammals, birds, reptiles and fish and to prepare or supply scientific skins and oological specimens.

Our life groups of the above are sought by those who recognize ability and accurateness of workmanship and the perfect condition of material furnished.

Descriptive matter relative to our methods, also references pertaining to our responsibility, will be furnished upon application.

Karl W. Kahmann

Work Rooms and Studio

2457 Lincoln Avenue CHICAGO, ILL.

MORE THAN 100,000 SLIDES TO RENT

Lecture sets on History, Art, Music, Travel, Science, Temperance, Bible History, etc.

Catalogue on application.

Gerard Alan Abbott, in his lecturing, uses lantern slides and views of our preparation. He says: "In nature work your color artists are remarkably accurate."

The Geo. W. Bond Slide Co.

(Incorporated)

14 W. Washington Street,

CHICAGO, ILL.

Special Slides made to order from negatives, photographs, half-tones and other copy.

We sell THE BONDOPTICON.

The "Last Word in Stereopticons."

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 00987 8299